最 終 報 告 書

2-*tert*-ブチルフェノールのラット新生児における哺育期投与試験

（試験番号：98-095）

財団法人　畜産生物科学安全研究所

陳　述　書

試験の表題

2-*tert*-ブチルフェノールのラット新生児における哺育期投与試験

（試験番号：98-095）

本試験は，化審法のＧＬＰ「新規化学物質に係る試験および指定化学物質に係る有害性の調査の項目等を定める命令第４条に規定する試験施設について」（昭和59年３月31日付環保業第39号環境庁企画調整局長，薬発第229号厚生省薬務局長，59基局第85号通商産業省基礎産業局長，通達）に定める基準に準拠して実施した．

試験責任者

財団法人　畜産生物科学安全研究所

安全性研究部　部長

[redacted]

平成12年３月６日

試験の表題

2-*tert*-ブチルフェノールのラット新生児における哺育期投与試験（試験番号98-095）

試験委託者

名　　称	厚生省生活衛生局
所　在　地	東京都千代田区霞が関一丁目２番２号
委託責任者	局　　長 [redacted]

試験実施施設

名　　称	財団法人　畜産生物科学安全研究所
所　在　地	神奈川県相模原市橋本台三丁目７番11号
運営管理者	専務理事 [redacted]
	専務理事
試験責任者	安全性研究部長
信頼性保証	試験研究管理室
責任者	主任研究員

試験日程

試験開始	平成11年６月７日
母動物搬入	平成11年６月17日
分　　娩	平成11年６月24日
群　分　け	平成11年６月27日
投与開始	平成11年６月28日
投与終了・離乳	平成11年７月15日
投与終了時解剖	平成11年７月16日
観察終了	平成11年９月16日
観察終了時解剖	平成11年９月17日
試験終了	平成12年３月６日

試験成績の信頼性に影響を及ぼしたと思われる要因

本試験に関し，試験成績の信頼性に影響を及ぼしたと思われる要因はなかった．

試資料の保管

次に示す本試験に関する一連の関係試資料は，試験終了後10年間，財団法人 畜産生物科学安全研究所において保管する．その後の処置については，試験委託者と協議して決定する．

1）試験計画書
2）被験物質に関する記録およびそのサンプル
3）供試動物に関する記録
4）試験結果に関する記録（一般状態，体重，摂餌量，感覚・反射機能検査，外形分化状態，尿検査，血液学検査，血液生化学検査，剖検，器官重量，病理組織学検査等に関する生データ）
5）血液塗抹標本および病理標本（固定器官，包埋ブロック，組織標本）
6）信頼性保証に関する記録
7）最終報告書

試験責任者の署名および試験担当者の業務分担

試　験　責　任　者

財団法人　畜産生物科学安全研究所

安全性研究部　部長

氏名 [redacted]　　平成 12年 3月 6 日

試験担当者およびその業務分担

投与液の調製

投与液の分析

動物飼育・投与・臨床観察

臨床検査

病理検査

[redacted]

信頼性保証証明書

試験表題　：　2-*tert*-ブチルフェノールのラット新生児における哺育期投与試験

試験番号　：　９８－０９５

審査・査察実施日	試験責任者への報告日	運営管理者への報告日
１．試験計画書記載事項変更審査		
（変－１） 平成11年07月01日	平成11年07月01日	平成11年07月01日
２．試験実施状況査察		
動物導入 平成11年06月17日	平成11年06月17日	平成11年06月17日
検　疫 平成11年06月18日	平成11年06月18日	平成11年06月18日
分娩の確認 平成11年06月24日	平成11年06月24日	平成11年06月24日
哺育状態の観察・被験物質調製 平成11年06月25日	平成11年06月25日	平成11年06月25日
群分け・個体識別 平成11年06月27日	平成11年06月27日	平成11年06月27日
体重測定・投与・症状観察 平成11年06月28日	平成11年06月28日	平成11年06月28日
被験物質調製 平成11年07月08日	平成11年07月08日	平成11年07月08日
餌測定(残餌量)・症状観察 平成11年07月13日	平成11年07月13日	平成11年07月13日
投与・感覚，反射機能検査 平成11年07月14日	平成11年07月14日	平成11年07月14日
解剖・病理組織標本作製（臓器・組織の固定）・血液検査 平成11年07月16日	平成11年07月16日	平成11年07月16日
病理組織標本作製の外部委託（病理検体の引き渡し） 平成11年07月21日	平成11年07月21日	平成11年07月21日
病理組織標本作製の外部委託（病理組織標本の受け取り） 平成11年08月11日	平成11年08月11日	平成11年08月11日

審査・査察実施日	試験責任者への報告日	運営管理者への報告日
体重測定 平成11年08月12日	平成11年08月12日	平成11年08月12日
餌測定(給餌量) 平成11年08月25日	平成11年08月25日	平成11年08月25日
血液学的検査 平成11年08月31日	平成11年08月31日	平成11年08月31日
尿検査 平成11年09月10日	平成11年09月10日	平成11年09月10日
解　剖 平成11年09月17日	平成11年09月17日	平成11年09月17日
3．生データ査察 平成12年01月11日 ～ 同年01月12日	平成12年01月12日	平成12年01月12日
4．報告書（草案）審査 平成12年01月14日 ～ 同年01月17日	平成12年01月17日	平成12年01月17日
5．報告書審査 平成12年03月06日	平成12年03月06日	平成12年03月06日

上記の審査・査察により、本試験が「化審法ＧＬＰ」に従って実施され、本報告書には、当該試験で使用した方法・手順が忠実に記載され、試験成績には、当該試験の実施過程において得られた生データが正確に反映されていることを確認した。

平成 12 年 3 月 6 日
財団法人　畜産生物科学安全研究所

信頼性保証責任者 [redacted]

目　次

添付資料B　個体別表等

要約

2-*tert*-ブチルフェノールのラット新生児哺育期投与による反復投与毒性並びにその後の成長，機能及び形態に及ぼす影響について検討するため，SD系[Crj:CD(SD)IGS]ラットの新生児を１群雌雄各12匹とし，本物質を０，20，60及び200mg/kg/dayで，４日齢から21日齢までの18日間反復経口投与し，22日齢で各群の半数を解剖した．残りの半数は21日齢で離乳させ，84日齢まで観察し，85日齢で解剖した．

投与期間中及び投与終了時の観察・検査において，200mg/kg群で雌雄に自発運動低下，筋力低下，よろめき歩行，振戦，深大呼吸，削痩等の症状及び体重増加の抑制が認められた．60mg/kg群においても自発運動低下が認められたが，雄の１匹のみの変化で，しかも一過性の変化であった．血液生化学検査では，200mg/kg群で雌雄にγ-GTP，雄に総タンパクの有意な増加，器官重量では，60mg/kg群で雌及び200mg/kg群で雌雄に，肝臓相対重量の有意な増加，並びに200mg/kg群で雌に，脳の絶対重量の有意な減少が認められた．病理組織学検査では，60mg/kg群で雌及び200mg/kg群で雌雄に，肝臓の肝細胞肥大が認められた．感覚反射機能，血液学検査及び剖検では，被験物質の投与に起因する変化は，認められなかった．

一方，投与後の観察及び観察期間終了時の検査では，一般状態，外形分化状態，摂餌量，尿検査，血液学検査，血液生化学検査，剖検及び病理組織学検査で，被験物質の投与に起因する変化は認められず，200mg/kg群の体重も回復傾向を示した．

以上の結果から，2-*tert*-ブチルフェノールのラット新生児に対する反復投与毒性は，神経行動学的影響並びに脳重量，体重及び肝臓に対する影響であった．また，哺育期の投与により発現した変化は可逆的で，投与終了後のラットの成長，機能及び形態に対する影響は認められなかった．無影響量は，雄で60mg/kg/day，雌で20mg/kg/dayと推定された．

緒言

2-*tert*-ブチルフェノールは，レシン，可塑剤，界面活性剤，香料，抗酸化剤，農薬等の合成原料あるいは中間体として知られている化学物質である．

2-*tert*-ブチルフェノールの毒性について，ラット腹腔内投与による急性LD_{50}値は82 mg/kg[1]で，局所刺激性を有する[2]ことが報告されているものの，反復投与毒性や生殖発生毒性についての報告はみられない．

一方，2-*tert*-ブチルフェノールに内分泌攪乱作用が疑がわれ，またブチルフェノールを含むアルキルフェノール類の内分泌攪乱作用や細胞毒性の観点からの構造活性相関に関する多くの報告[3, 4]がみられるが，このような物質に暴露された乳幼児のその後の成長や機能に及ぼす影響についてはほとんど明らかにされていない．さらに，生殖発生毒性試験における化学物質の新生児に対する暴露は母乳を通じて行われるが，化学物質の高用量を直接新生児に投与した場合の影響についてもほとんど調べられていない．

試験目的

2-*tert*-ブチルフェノールをラットの新生児に哺育期間中反復経口投与し，新生児に対する反復投与毒性並びにその後のラットの成長，機能及び形態に及ぼす影響を検討する．

試験材料及び方法

1．被験物質

2-*tert*-ブチルフェノール(CAS No.88-18-6)は，分子量150.22，融点－7℃，沸点224℃，比重0.98（25℃），水に難溶，アセトン，アルコール，植物油に易溶な芳香臭の透明液体で，試験には大日本インキ化学工業株式会社（千葉県佐倉市坂戸631番1 ）から提供されたロット番号C169，純度99.97％（不純物としてフェノール0.03wt％を含む）のものを窒素で封入して冷暗所（4℃）で保管し，使用した．被験物質の詳細は，Appendix 1 に示した．用いた被験物質を大日本インキ化学工業株式会社に委託して試験終了後に分析し，試験期間中安定であったことを確認した（Appendix 2)．被験物質投与液について，2-*tert*-ブチルフェノールは油溶性であるので，局方オリブ油（宮澤薬品株式会社，ロット番号F107）を溶媒とし，所定の投与用量になるような濃度の溶液に調製した．投与液は少なくとも8日間は安定であることが確認されている[5]ので週1回調製し，1日の使用量ごとに小分けし，窒素で封入して使用時まで冷暗所（4℃）・遮光下で保管し，調製後7日以内に使用した．また，初回に調製した投与液について分析し，所定の濃度で調製されていることを確認した(Appendix 3)．

2．供試動物及び飼育条件

動物はSD系［Crj:CD(SD)IGS]SPFラット（９週齢）の妊娠雌（妊娠15日）を，日本チャールス・リバー株式会社 厚木飼育センター（神奈川県厚木市下古沢795番地）から20匹搬入し，分娩後新生児が３日齢に達するまでの10日間検疫・馴化飼育し，その間に体重測定及び臨床観察を行い，健康状態，分娩状態，哺育状態等を確認した．試験に用いる母動物は，妊娠21日の午後５時以降に分娩を開始し，妊娠22日の午前中に分娩を終了して正常な哺育状態を示す母動物の内，新生児数が中央値に近い個体から順に12匹を選別した．新生児の群分けは３日齢（出産日を０日齢とする）時に行い，選択した母動物の新生児を親から離して雌雄別にプールした後体重を測定し，体重の中央値に近い個体から順に雌雄各48匹の新生児を選別し，１群雌雄各12匹として体重に基づく層化無作為抽出法により４群に振り分けた．振り分けた各群の新生児の雌雄各１匹を，無作為抽出法により12匹の母動物（里親）に振り分け，母動物当たり群の異なる雌雄各１匹の計８匹が割り当てられるようにした（Appendix 4）．新生児の群分日平均体重（体重範囲）は雄 10.0（9.4－10.6)g，雌 9.5(9.0－10.1)g，その翌日の投与開始日平均体重（体重範囲）は雄 12.0(11.2－13.1)g，雌 11.6(10.8－12.7)gであった．各個体は，ラック及びケージへの標識並びに親動物及び離乳後の児動物は耳パンチ法，離乳前の新生児は雌雄別に左右前後肢の足掌に入れ墨することにより識別した．ラットは，温度21－23℃，湿度52－61％，換気回数10回以上／時（オールフレッシュエアー方式，温度・湿度の測定結果：Appendix5），照明時間12時間／日（午前６時点灯，午後６時消灯）に制御されたバリアーシステム動物室（第１室）で，親動物及び離乳後（生後21日に離乳）の児動物は個体別に，離乳前は親動物と児動物と同居させて飼育した．飼育ケージは，導入時から分娩を経て離乳まではポリカーボネート製ケージ〔265W×426D×200H(mm)，床敷としてホワイトフレーク（日本チャールス・リバー株式会社）〕，離乳後はステンレス製ケージ〔260 w×380D×180H(mm)〕を用い，これをステンレス製５段のラックに配置した．飼料（固型飼料ラボMRストック，日本農産工業株式会社，ロット番号 99.03.73, 99.06.53, 99.07.55)と飲料水（１μmのカートリッジフィルターで濾過後紫外線照射した殺菌水道水）は自由に摂取させた．飼料，床敷及び飲料水中の汚染物質についての分析の結果(Appendices 6～8)，いずれも許容濃度の範囲内で，動物室の温度・湿度の測定結果からも，試験成績の信頼性に影響を及ぼすと思われる環境要因の変化はなかったものと判断された．なお，児動物の離乳後は親動物を試験から除外した．

3．投与量の設定，試験群の構成及び投与方法

投与量は，本試験に先立ち実施した投与量設定試験の結果に基づいて設定した．すな

わち，2-*tert*-ブチルフェノールを新生児ラットに単回投与した結果，500mg/kgで雌雄に死亡が認められたため，投与量設定試験は1群雌雄各5匹の新生児ラットに0，20，60及び200mg/kg/dayで，生後4日から21日までの18日間経口投与した．200mg/kg群で雌雄に活動性低下，体重増加の抑制，肝臓の相対重量増加，雌ではさらに深大呼吸が認められた．60mg/kg群では，雄に肝臓の相対重量増加が認められた．

以上の結果から，本試験における投与量は，確実に毒性影響が発現すると予測される200mg/kg/dayを高用量，毒性影響が発現しないと予測される20mg/kg/dayを低用量とし，これらの用量の間に60mg/kg/dayの計3用量を設定した．試験群の構成は，(1) 溶媒投与群（以下，対照群），(2) 被験物質の20mg/kg/day投与群（20mg/kg群），(3) 同 60mg/kg/day投与群（60mg/kg群），(4) 同 200mg/kg/day投与群（200mg/kg群）の4群とし，各群雌雄各12匹のうち，雌雄各6匹は投与終了の翌日（22日齢）に解剖に供する投与終了時解剖動物，残りの雌雄は観察終了翌日（85日齢）に解剖に供する観察終了時解剖動物とした．

投与方法は，投与液量を体重1kg当たり3mLとし，外径0.96mmのポリエチレン製チューブあるいはテフロン製マウス用経口ゾンデを装着した注射筒を用いて，生後4日から21日（離乳）までの18日間，毎日1回（午前中），胃内に投与した．各個体の投与液量は，至近日の測定体重をもとに算出した．対照群には，被験物質を投与液に調製するために用いた溶媒を同様に投与した．

4．観察及び検査

観察期間を，投与開始から親動物は児動物の離乳まで，児動物は生後84日までとし，児動物については生後22日に投与終了時の解剖，85日に観察終了時の解剖を行った．その間に，次の観察及び検査を実施した．

1) 親動物

(1) 一般状態観察

観察期間中毎日，哺育行動を含む一般状態について観察した．

(2) 体重

哺育4（分娩終了の確認日を哺育0日とする），10，16及び21日に測定した．

(3) 摂餌量

哺育6～7，12～13及び18～19日の間の24時間飼料消費量を，児動物を含めた母動物単位で測定した．

2) 児動物

(1) 一般状態観察

毎日，少なくとも1回は動物の一般状態について観察した．投与期間中，毎日2回は動物の死亡や瀕死動物の有無を確認した．離乳前の観察では，親動物を離した状態での観察も行った．

(2) 感覚・反射機能検査

雄は生後20日，雌は21日にスコアリングシステムにより歩行状態（1：不動，2：正常，3：よろめく，4：後肢伸展／引きずり，5：肢が外側を向く，6：前肢の引きずり／体重が支えきれない，7：つま先立で歩行，8：体を引きずる／平伏），瞳孔反射（1：直ちに反応，2：反応なし），耳介反射（Preyer反射）及び角膜反射（1：正常，2：やや反応遅い，3：反応遅い，4：反応なし），視覚性踏み直り反射（1：直ちにつかむ，2：つかもうと繰り返した後つかむ，3：つかもうとするが方向を間違える，4：つかもうとしない），面上正向反射（1：素早く復帰／正常，2：やや遅い／1秒以上，3：遅い／2秒以上，4：仰向けのまま），空中正向反射（1：正常に着地，2：側位，3：背位）並びに同側屈筋反射（1：直ちに同側に反応，2：反対側に反応，3：反応なし）について検査した．

(3) 外形分化状態観察

全例について，投与終了日を限度として生後7日から毛生，9日から切歯萌出，11日から眼瞼開裂の状態を陽性になるまで，また観察期間終了時屠殺動物についてのみ，雄は生後17日から精巣下降，雌は29日から膣開口の状態を陽性になるまで毎日観察した．

(4) 体重

生後4，7，10，13，16，19，21日，その後は7日間隔で測定し，投与期間中及びその後の観察期間中の体重増加量を算出した．また屠殺日にも測定した．

(5) 摂餌量

離乳後，体重の測定日に合わせて前日からの24時間飼料消費量を測定した．

(6) 尿検査

生後78～82日の間に検査を行った．すなわち，新鮮尿を採取し試験紙法（マルティスティックス，バイエル・三共株式会社）による潜血，pH，タンパク，糖，ケトン体，ビリルビン，ウロビリノーゲンの定性的検査，またラットを代謝ケージに短時間（約3時間）収容して得た蓄尿について，色調の観察，比重の測定（屈折計，エルマ光学株式会社）及び沈渣の検査（URI-CELL液，ケンブリッジケミカルプロダクト社，で染色して鏡検）を行った．さらに，18時間の尿量を測定した．

(7) 血液学検査

採血は，投与期間終了翌日及び観察期間終了翌日にエーテル麻酔下で開腹して腹大動脈より行った．動物は前日の午後5時より除餌し，水のみを与えた．採取した血液は3分割し，その一部は EDTA-2K で凝固防止処理し，多項目自動血球計数装置（E-4000，東亜医用電子株式会社）により，赤血球数（電気抵抗検出方式），血色素量（ラウリル硫酸ナトリウムーヘモグロビン法），ヘマトクリット値（パルス検出方式），平均赤血球容積，平均赤血球血色素量，平均赤血球血色素濃度（以上，計算値），白血球数及び血小板数（以上，電気抵抗検出方式）を，また塗抹標本を作製して網状赤血球数（Brilliant cresyl blue染色標本の鏡検）及び白血球百分率（May-Giemsa染色標本の鏡検）を測定した．さらに，一部は3.8%クエン酸ナトリウム液で処理後血漿を分離し，血液凝固自動測定装置（KC-10A，米国アメルング社）によりプロトロンビン時間（Quick 一段法）及び活性化部分トロンボプラスチン時間（エラジン酸活性化法）を測定した．

(8) 血液生化学検査

採取した血液の一部から血清を分離し，生化学自動分析装置（JCA-BM 8型クリナライザー，日本電子株式会社）により総タンパク（ビューレット法），アルブミン(BCG法），A/G 比（計算値），血糖（Glck[1]-G-6-PHD[2]法），総コレステロール（酵素法，CES[3]-CO[4]-POD[5]系），トリグリセライド（酵素法，LPL[6]-GK[7]-GPO[8]-POD[5]系），リン脂質（PLD[9]-COD[10]-POD[5]系），総ビリルビン（ジアゾ法），尿素窒素（ウレアーゼ・UV法），クレアチニン（Jaffe法），GOT，GPT，ALP，γ-GTP（以上，JSCC[11]法），LDH（SFBC[12]法），コリンエステラーゼ（BTC[13]-DTNB[14]法），カルシウム（OCPC法）及び無機リン（酵素法，PNP[15]-XOD[16]-POD[5]系）を，また電解質自動分析装置（NAKL-132，東亜電波工業株式会社）によりナトリウム，カリウム及び塩素（以上，イオン電極法）を測定した．

[1]：グルコキナーゼ，[2]：グルコース-6-リン酸脱水素酵素，
[3]：コレステロールエステラーゼ，[4]：コレステロールオキシダーゼ，[5]：ペルオキシダーゼ，[6]：リポプロテインリパーゼ，
[7]：グリセロールキナーゼ，[8]：L-α- グリセロリン酸オキシダーゼ，[9]：ホスフォリパーゼ，[10]：コリンオキシダーゼ，
[11]：日本臨床化学会，[12]：フランス臨床生物学会，
[13]：ブチリルチオコリン，[14]：5,5-ジチオビス-2-ニトロ安息香酸，[15]：プリンヌクレオシドホスフォリラーゼ，
[16]：キサンチンオキシダーゼ

(9) 剖検

最終投与日の翌日あるいは観察終了日の翌日の採血に続いて放血屠殺し，体表，開口部粘膜及び内部諸器官を肉眼的に観察した．

(10) 器官重量

脳，下垂体，胸腺，甲状腺，心臓，肺（気管を含めて秤量），肝臓，脾臓，腎臓，副腎，雄ではさらに精巣，精巣上体，前立腺，精嚢（投与終了時解剖動物では前立腺を含めて秤量），雌では卵巣，子宮を秤量（絶対重量）し，解剖日の体重に基づいて対体重比（相対重量）を算出した．なお，対器官は左右を一括して，下垂体，甲状腺は固定後に秤量した．

(11)病理組織学検査

下記器官を採取し，10%中性リン酸緩衝ホルマリン液（精巣，精巣上体はブアン液で前固定）で固定して保存した．

脳，下垂体、眼球，胸腺，甲状腺（上皮小体を含む），肺（気管支を含む），気管，心臓，舌，食道，胃，腸（十二指腸，空腸，回腸，盲腸，結腸，直腸），肝臓，膵臓，脾臓，腎臓，副腎，リンパ節（頸部リンパ節，腸間膜リンパ節），膀胱，脊髄の頸，胸，腰部），骨髄（大腿骨，胸骨），坐骨神経，大動脈，下腿三頭筋，その他肉眼的異常部位，さらに雄では精巣，精巣上体，前立腺，精嚢，雌では卵巣，子宮

病理組織学検査は，対照群と200mg/kg群の全動物の脳，下垂体，胸腺，甲状腺，肺，気管，心臓，胃，腸，肝臓，膵臓，脾臓，腎臓，副腎，リンパ節，膀胱，脊髄，骨髄，坐骨神経，精巣，精巣上体，前立腺，精嚢，卵巣及び子宮について実施した．20及び60mg/kg群については，200mg/kg群の検査の結果，被験物質の投与による影響が肝臓に認められたので，肝臓及び肉眼的異常の認められた器官について実施した．検査は，常法に従ってパラフィン切片を作製し，H-E染色を施して鏡検した．組織標本は，株式会社組織科学研究所（東京都青梅市黒沢二丁目984-1番）に委託して作製した．

5．統計解析

得られた平均値あるいは頻度について，対照群との有意差（危険率5%以下）を次の方法で検定した．すなわち，パラメトリックデータ（体重・体重増加量・摂餌量・外形分化状態観察データ・尿量及び尿比重・血液学検査データ・血液生化学検査データ・器官重量）は，Bartrettの分散検定を行った．分散が一様な場合は一元配置の分

散分析を行い，その結果有意差が認められた場合，Dunnett 法あるいはScheffe 法（群間で標本数が異なる場合）により，被験物質投与各群と対照群との比較検定を行った．分散が一様でない場合およびノンパラメトリックデータ（白血球百分率・尿検査における定性的データ）は，Kruskal-Wallisの順位検定を行い，その結果有意差が認められた場合，Dunnett 型あるいはScheffe 型（群間で標本数が異なる場合）の検定により，被験物質投与各群と対照群を比較した．カテゴリカルデータ（一般状態の観察・感覚反射機能検査・剖検・病理組織学検査の各データ）には，Fisherの直接確率法を用いた．

試験結果

1．児動物

1）一般状態及び死亡（Tables 1, 2, Appendices 9, 10）

投与期間中の観察において，雄雌各12匹中200mg/kg群で，自発運動低下，筋力低下及び深大呼吸が雌雄の全例，よろめき歩行が雄の4匹及び雌の6匹，皮膚蒼白が雄の4匹及び雌の2匹に認められた．また，発現率は低かったが，同群の雌雄に振戦及び削痩例も認められた．60mg/kg群では，雄に自発運動低下が認められたが1匹のみで，しかも投与開始日のみ認められた一過性の変化であった．死亡は，認められなかった．

投与終了後の観察期間中の観察において，一般状態の変化及び死亡は認められなかった．

2）感覚・反射機能（Table 3, Appendices 11, 12）

投与期間中の検査において，歩行状態並びに面上正向反射，空中正向反射，視覚性踏み直り反射，角膜反射，同側屈筋反射，耳介反射及び瞳孔反射の各機能については，検査した全ての例で正常であった．

3）外形分化状態（Table 4, Appendices 13, 14）

腹部毛生，切歯萌出，眼瞼開裂，精巣下降及び膣開口の時期において，被験物質の投与に起因した変化は認められなかった．対照群に比べて60mg/kg群の雄の眼瞼開裂の時期はやや早く，20及び60mg/kg群の雌の膣開口の時期はやや遅く，いずれも有意差が認められたが，用量相関性は認められなかった．

4）体重（Figures 1, 2, Tables 5, 6, Appendices 15, 16）

投与期間中において，200mg/kg群で雌雄の体重は投与4日（7日齢）から投与期間を通じて対照群を有意に下回り，投与期間中の体重増加量は有意に減少した．

投与終了後の観察期間においては，200mg/kg群の体重は，雄は投与終了後7日（28日齢）以降，雌は21日（42日齢）以降，いずれも対照群と比べて有意差が認められなくなり，回復傾向を示した．その後，雄の被験物質投与各群の体重は200mg/kg群を含めて対照群を上回って推移する傾向を示し，20mg/kg群では49日齢以降の体重及び投与終了後の観察期間中の体重増加量に有意差が認められた．

5）摂餌量（Tables 7, 8, Appendices 17, 18）

投与終了後の観察期間において，被験物質投与各群の雄の摂餌量は対照群と比べて全

般的に多く，20mg/kg群で49及び56日齢，60mg/kg群で49日齢，200mg/kg群で35から49日齢までの摂餌量に有意差が認められた．しかしながら，変化に用量相関性は認められなかった．

6）尿検査（Tables 9, 10, Appendices 19, 20）

観察期間中の検査において，各検査項目に有意な変化は認められなかった．

7）血液学検査（Tables 11－14, Appendices 21－24, 背景データ：Appendices 43, 44）

投与期間終了時および観察期間終了時の検査において，各検査項目に有意な変化は認められなかった．

8）血液生化学検査（Tables 15－18, Appendices 25－28, 背景データ：Appendices 43, 44）

投与期間終了時の検査において，200mg/kg群で雌雄にγ-GTP及び雄に総タンパクの，いずれも有意な増加が認められた．

観察期間終了時の検査においては，被験物質の投与に起因する変化は認められなかった．なお，観察期間終了時検査で，被験物質投与各群の雄の血糖値は対照群に比べて全般的に高く，20及び200mg/kg群で有意差が認められた．また，20mg/kg群の雄のトリグリセライドは有意な高値を示した．しかしながら，血糖値及びトリグリセライドの変化には，用量相関性は認められなかった．

9）剖検（Tables 19－20, Appendices 29－32）

投与期間終了時及び観察期間終了時の解剖動物において，被験物質の投与に起因する変化は，認められなかった．

なお，被験物質の投与とは無関係と思われる変化として，観察期間終了時解剖動物で，60mg/kg群の雌の１匹に肺の赤色点が認められた．

10）器官重量（Tables 21－24, Appendices 33－40）

投与期間終了時の解剖において，200mg/kg群で雌雄及び60mg/kg群で雌に，肝臓の相対重量の有意な増加が認められた．なお，200mg/kg群で雌雄に最終体重の有意な減少が認められ，肝臓以外の器官の絶対重量は全般的に対照群を下回る傾向が認められ，雌の脳及び下垂体は有意な減少を示し，雌雄の脳の相対重量は有意な増加を示した．

観察期間終了時の解剖においては，被験物質の投与と関連する変化は認められなかった．なお，被験物質投与各群の雄及び60mg/kg群の雌の最終体重は，対照群に比べてやや高値を示し，20mg/kg群の雄の体重には有意差が認められた．また，いずれも相対重量で，雄では20及び200mg/kg群の脳，60mg/kg群の甲状腺，20mg/kg群の下垂体並びに20及び200mg/kg群の精巣はいずれも有意な低値，雌では60mg/kg群の下垂体は有意な高値を示した．しかしながら，これらの体重及び各器官の相対重量における変化に，用量相関性は認められなかった．

11）病理組織学検査（Tables 25－28, Appendices 29－32）

投与期間終了時解剖動物において，肝臓の小葉中心性肝細胞肥大が各6匹中60mg/kg群で雌の1匹，200mg/kg群で雄に4匹，雌に3匹認められた．

観察期間終了時解剖動物においては，被験物質の投与に起因する変化は認められなかった．剖検で投与とは無関係に認められた肺の暗赤色点には出血が認められた．

なお，以上の変化以外にも，投与期間終了時解剖動物及び観察期間終了時解剖動物において，検査した各器官に変化が認められたが，散発的あるいは対照群における発現率あるいは変化の程度と差は認められず，偶発的と判断される変化であった．

2．親動物の健康状態（Appendices 41, 42）

一般状態，児動物の哺育状態，体重及び摂餌量に異常は認められなかった．

考察

2-*tert*-ブチルフェノールをラットの新生児に，0，20，60及び200mg/kg/dayで，哺育期間中経口投与し，新生児に対する反復投与毒性並びに投与後のラットの成長，機能及び形態に及ぼす影響について検討した．

反復投与毒性について，200mg/kg群で雌雄に自発運動低下，筋力低下，よろめき歩行，振戦及び深大呼吸等の神経行動学的症状，削痩並びに体重増加の有意な抑制が，認められた．血液生化学検査では，200mg/kg群で雌雄にγ-GTP，雄に総タンパク，器官重量では60mg/kg群で雌及び200mg/kg群で雌雄に，肝臓の相対重量のいずれも有意な増加，200mg/kg群で雌に脳の絶対重量の有意な減少が認められた．病理組織学検査では，60mg/kg群で雌及び200mg/kg群で雌雄に，肝臓の小葉中心性肝細胞肥大が認められた．感覚・反射機能検査，血液学検査及び剖検では，変化は認められなかった．

200mg/kg群で認められた神経行動学的症状について，感覚・反射機能検査で変化は認められず，投与の終了により症状は消失し，脳，脊髄及び坐骨神経に病理組織学的変化は認められなかった．また，予備試験で，500mg/kgでは単回投与においても雌雄に死亡が認められた．したがって，2-*tert*-ブチルフェノールは，急性中毒量に近い用量で，新生児ラットの神経行動機能に影響を及ぼすものと考えられる．

なお，自発運動低下は60mg/kg群においても認められたが，投与開始日に雄の12匹中1匹のみに認められた一過性の変化であった．

200mg/kg群の雌で認められた脳の絶対重量減少について，本被験物質とは類縁の4-エチルフェノール[6]及び3-メチルフェノール[7]のラット哺育期投与試験においても，明らかな体重増加の抑制が認められる用量で，脳の絶対重量減少が認められている．

脳は栄養状態の影響を受けにくい器官で，毒性試験で一般的に用いられている5週齢以降のラットでは，経験上，成長抑制に伴う脳重量への影響は殆ど認められない．しかしながら，哺育期のラットは機能，形態とも著しい成長過程に有り，成長抑制の影響を受けやすいものと推察される．

また，200mg/kg群の雌に認められた下垂体の絶対重量のみの減少も，体重増加の抑制に伴う二次的変化と判断された．

60mg/kg群の雌及び200mg/kg群の雌雄に認められた肝細胞の肥大，並びにそれとの関連性が考えられる肝臓相対重量の増加について，血清GOT，GPTには変化が認められなかったがγ-GTPの増加を伴っており，2-*tert*-ブチルフェノールは肝臓に対して有害な影響を有するものと判断される．また，総タンパクの増加についても，肝機能に対する影響を示唆する変化と考えられる．

一方，投与終了後の観察期間中及び観察終了時の検査において，一般状態，外形分化

状態，摂餌量，尿検査，血液学検査，血液生化学検査，剖検，器官重量及び病理組織学検査で，被験物質の投与に起因する変化は認められなかった．

観察期間中の被験物質投与各群の雄の摂餌量及び体重増加量は，全般的に対照群に比べて多く，用量相関性のない有意差が認められたが，偶発的な変化と判断される．

以上の結果から，2-*tert*-ブチルフェノールのラット新生児に対する反復投与毒性は神経行動機能並びに脳重量，体重及び肝臓に対する影響であった．哺育期の投与により発現した変化は可逆的で，また，哺育期の投与によるその後のラットの成長，機能及び形態に影響は認められなかった．無影響量は，雄で60mg/kg/day，雌で20mg/kg /dayと推定された．

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6) : [redacted] (財) 畜産生物化学安全研究所　所内資料 (試験番号 98-097).

7) : [redacted] (財) 畜産生物化学安全研究所　所内資料 (試験番号 98-096).

2-*tert*-ブチルフェノールのラット新生児における哺育期投与試験

（試験番号：98-095）

報告書　添付資料Ａ

（図・群別平均値表）

財団法人　畜産生物科学安全研究所

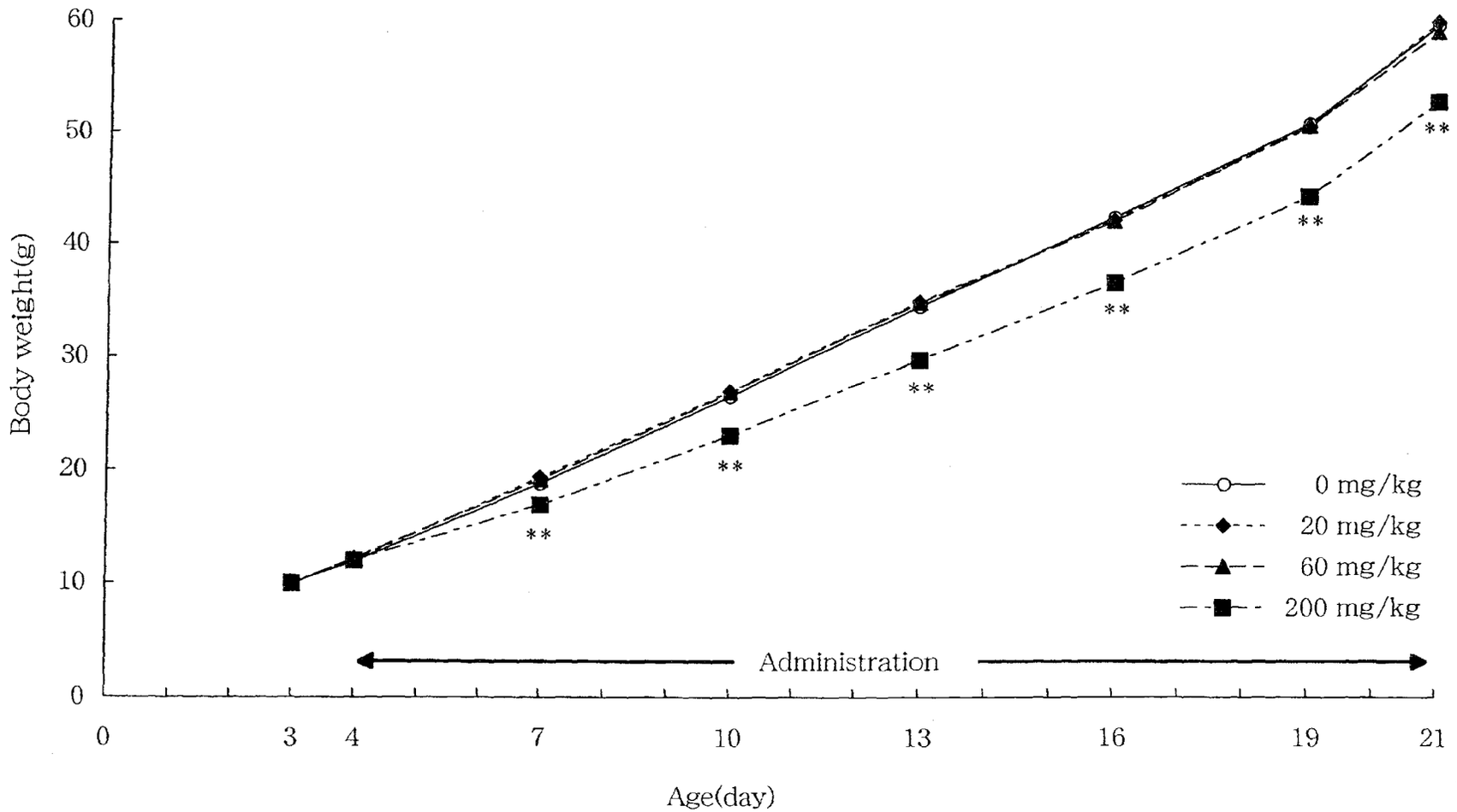


Fig.1-1 Body weight changes of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Significantly different from control (** : $p<0.01$)

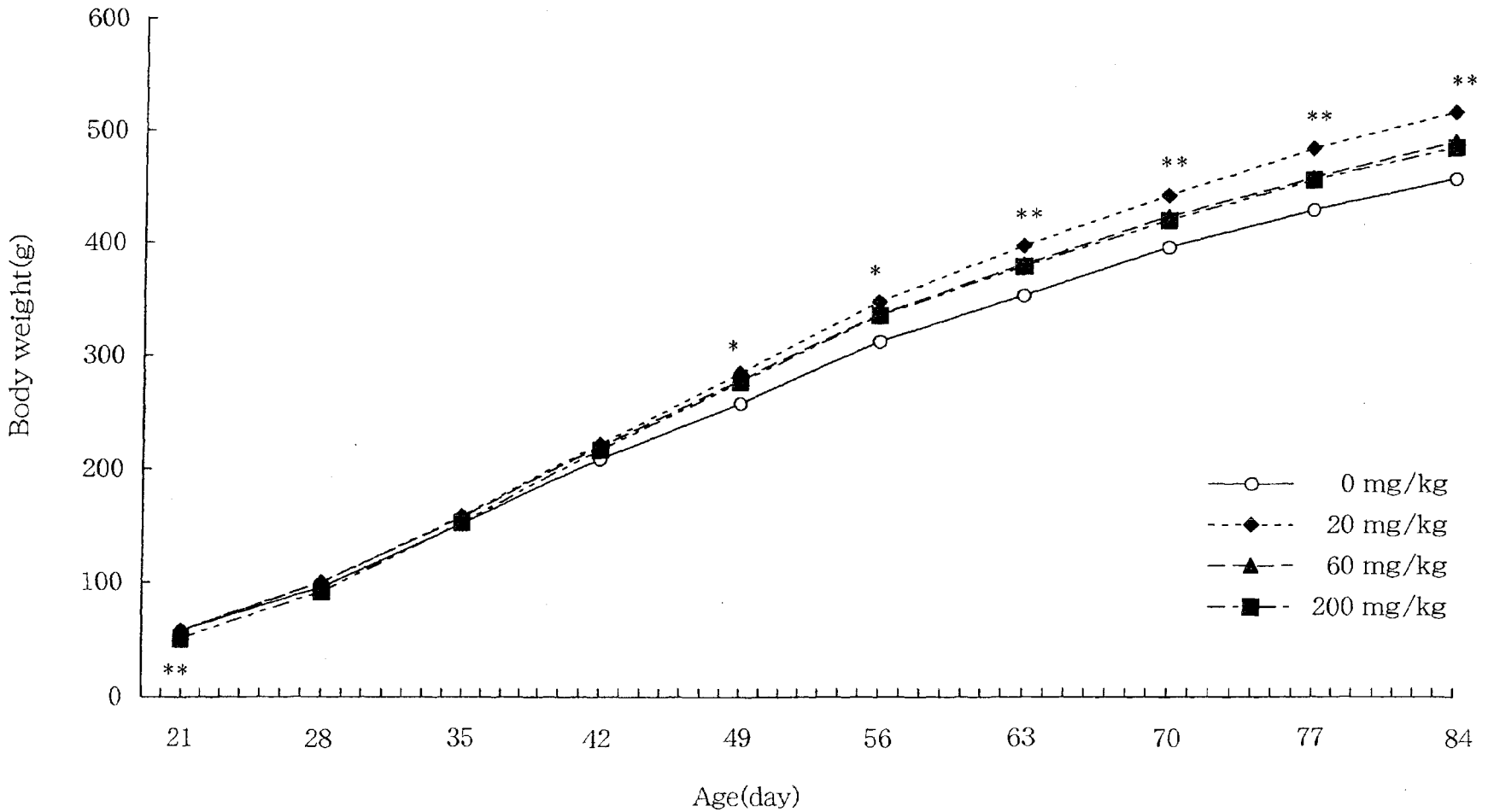


Fig.1-2 Body weight changes of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

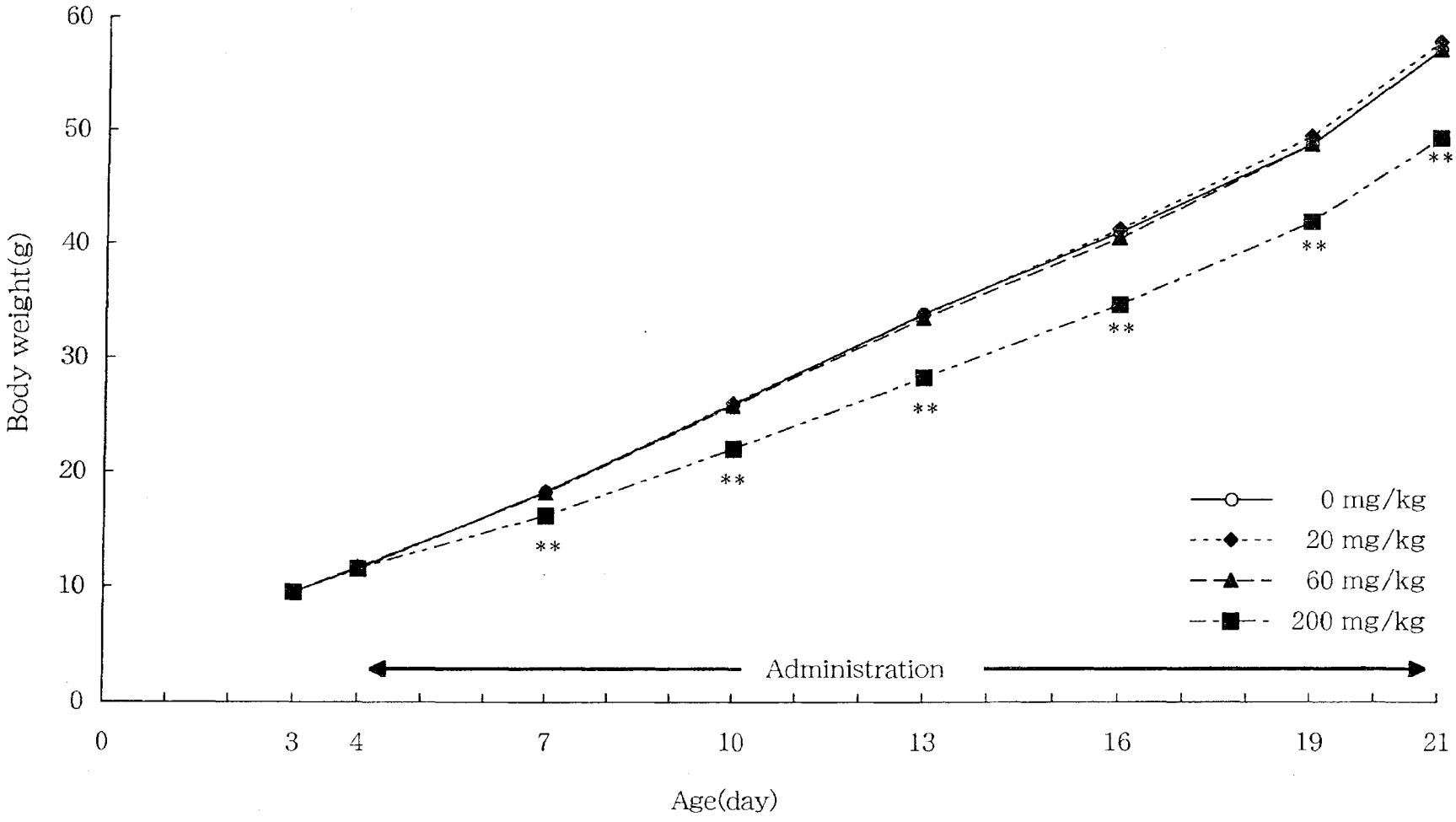


Fig.2-1 Body weight changes of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Significantly different from control (** : $p<0.01$)

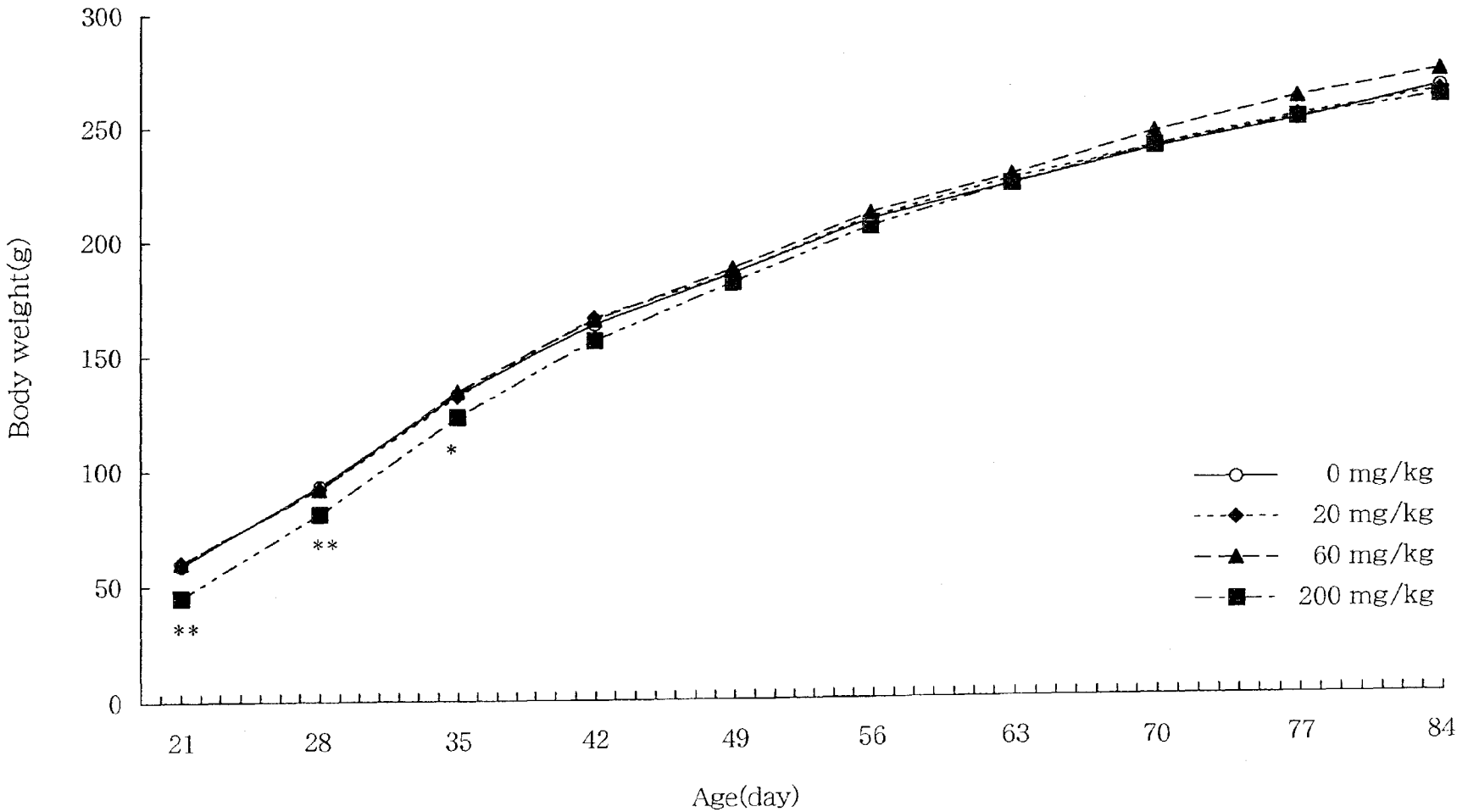


Fig.2-2 Body weight changes of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 1 Mortality rate and incidence of clinical signs of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

		Administration period				Post-administration period			
Dose (mg/kg/day)		0	20	60	200	0	20	60	200
Fate		TK	TK	TK	TK	TK	TK	TK	TK
No. of animals examined		12	12	12	12	6	6	6	6
Mortality (%)	Grade	0	0	0	0	0	0	0	0
Clinical signs									
Decrease in locomotor activity	−	12	12	11	0	6	6	6	6
	+～++	0	0	1	12 **	0	0	0	0
Deep respiration	−	12	12	12	0	6	6	6	6
	+	0	0	0	12 **	0	0	0	0
Muscle weakness	−	12	12	12	0	6	6	6	6
	+～++	0	0	0	12 **	0	0	0	0
Tremor	−	12	12	12	10	6	6	6	6
	+	0	0	0	2	0	0	0	0
Emaciation	−	12	12	12	10	6	6	6	6
	+	0	0	0	2	0	0	0	0
Staggering gait	−	12	12	12	8	6	6	6	6
	+	0	0	0	4 *	0	0	0	0
Pale skin	−	12	12	12	8	6	6	6	6
	+～++	0	0	0	4 *	0	0	0	0

TK : Terminal kill; + : Slight; ++ : Moderate
Significantly different from control (*: $P<0.05$; ** : $p<0.01$)

Table 2 Mortality rate and incidence of clinical signs of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

		Administration period				Post-administration period			
Dose (mg/kg/day)		0	20	60	200	0	20	60	200
Fate		TK	TK	TK	TK	TK	TK	TK	TK
No. of animals examined		12	12	12	12	6	6	6	6
Mortality (%)	Grade	0	0	0	0	0	0	0	0
Clinical signs									
Decrease in locomotor activity	-	12	12	12	0	6	6	6	6
	+～++	0	0	0	12 **	0	0	0	0
Deep respiration	-	12	12	12	0	6	6	6	6
	+	0	0	0	12 **	0	0	0	0
Muscle weakness	-	12	12	12	0	6	6	6	6
	+～++	0	0	0	12 **	0	0	0	0
Tremor	-	12	12	12	9	6	6	6	6
	+	0	0	0	3	0	0	0	0
Emaciation	-	12	12	12	10	6	6	6	6
	+	0	0	0	2	0	0	0	0
Staggering gait	-	12	12	12	6	6	6	6	6
	+～++	0	0	0	6 **	0	0	0	0
Pale skin	-	12	12	12	11	6	6	6	6
	+	0	0	0	1	0	0	0	0

TK : Terminal kill; + : Slight; ++ : Moderate
Significantly different frpm control (**: $p<0.01$)

Table 3 Sensory functions of rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Sex	Contents	Dose(mg/kg)	0	20	60	200
Male		No. of animals examined	12	12	12	12
	State of gait	Normal	12	12	12	12
	Pupil reflex	Normal	12	12	12	12
	Pinna reflex	Normal	12	12	12	12
	Corneal reflex	Normal	12	12	12	12
	Visiual stepping reflex	Normal	12	12	12	12
	Righting reflex	Normal	12	12	12	12
	Air righting reflex	Normal	12	12	12	12
	Ispilateral flexor reflex	Normal	12	12	12	12
Female		No. of animals examined	12	12	12	12
	State of gait	Normal	12	12	12	12
	Pupil reflex	Normal	12	12	12	12
	Pinna reflex	Normal	12	12	12	12
	Corneal reflex	Normal	12	12	12	12
	Visiual stepping reflex	Normal	12	12	12	12
	Righting reflex	Normal	12	12	12	12
	Air righting reflex	Normal	12	12	12	12
	Ispilateral flexor reflex	Normal	12	12	12	12

Table 4 External differentiation and estrous cycle of rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	0	20	60	200
Male				
Appearance of hair (days of age)	7.0 ± 0.0 (12)	7.0 ± 0.0 (12)	7.0 ± 0.0 (12)	7.0 ± 0.0 (12)
Eruption of lower incisor (days of age)	9.9 ± 0.5 (12)	10.0 ± 0.0 (12)	10.0 ± 0.4 (12)	9.8 ± 0.6 (12)
Separation of eyelieds (days of age)	14.1 ± 0.5 (12)	13.7 ± 0.5 (12)	13.5 ± 0.5 (12) *	13.8 ± 0.4 (12)
Descent of testes (days of age)	17.3 ± 1.2 (6)	17.5 ± 1.0 (6)	16.8 ± 1.0 (6)	17.0 ± 1.1 (6)
Female				
Appearance of hair (days of age)	7.0 ± 0.0 (12)	7.0 ± 0.0 (12)	7.0 ± 0.0 (12)	7.0 ± 0.0 (12)
Eruption of lower incisor (days of age)	9.9 ± 0.5 (12)	10.1 ± 0.3 (12)	9.8 ± 0.5 (12)	10.0 ± 0.6 (12)
Separation of eyelids (days of age)	13.8 ± 0.4 (12)	13.4 ± 0.5 (12)	13.7 ± 0.5 (12)	13.5 ± 0.5 (12)
Opening of vagina (days of age)	31.5 ± 1.0 (6)	33.2 ± 1.2 (6) *	33.0 ± 0.9 (6) *	32.8 ± 0.8 (6)

Each value is expressed mean ± S.D. (No. of rats observed)
Significantly different from control (*:$p<0.05$)

Table 5-1 Body weights of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning
< Administration period >

(g)

Dose (mg/kg/day)	Days of age 3	4	7	10	13	16	19	21	Gain 4-21
0	10.0 ± 0.3 (12)	11.9 ± 0.5 (12)	18.8 ± 1.0 (12)	26.5 ± 1.5 (12)	34.5 ± 2.7 (12)	42.4 ± 3.1 (12)	50.8 ± 4.2 (12)	59.6 ± 4.7 (12)	47.7 ± 4.5 (12)
20	10.0 ± 0.3 (12)	12.1 ± 0.5 (12)	19.3 ± 1.0 (12)	26.9 ± 1.2 (12)	34.9 ± 1.9 (12)	42.2 ± 2.5 (12)	50.5 ± 3.6 (12)	59.9 ± 4.3 (12)	47.8 ± 4.3 (12)
60	9.9 ± 0.3 (12)	12.2 ± 0.5 (12)	19.1 ± 1.0 (12)	26.8 ± 1.2 (12)	34.8 ± 2.1 (12)	42.1 ± 2.6 (12)	50.6 ± 3.1 (12)	59.0 ± 3.3 (12)	46.9 ± 3.4 (12)
200	10.0 ± 0.3 (12)	12.0 ± 0.4 (12)	16.9 ** ± 1.0 (12)	23.0 ** ± 1.7 (12)	29.7 ** ± 2.7 (12)	36.6 ** ± 3.7 (12)	44.3 ** ± 4.6 (12)	52.8 ** ± 5.2 (12)	40.8 ** ± 5.3 (12)

Each value is mean and SD. (n): Number of animals weighed.
Significantly different from control (** : $p<0.01$)

Table 5-2 Body weights of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning
< Post-administration period >

(g)

Dose (mg/kg/day)	Days of age 21	28	35	42	49	56	63	70	77	84	Gain 21-84
0	58 ± 3 (6)	96 ± 2 (6)	152 ± 4 (6)	209 ± 6 (6)	258 ± 7 (6)	313 ± 11 (6)	354 ± 15 (6)	397 ± 18 (6)	430 ± 22 (6)	458 ± 26 (6)	400 ± 29 (6)
20	58 ± 4 (6)	100 ± 6 (6)	159 ± 10 (6)	222 ± 15 (6)	285 * ± 20 (6)	348 * ± 26 (6)	398 ** ± 26 (6)	443 ** ± 24 (6)	485 ** ± 29 (6)	517 ** ± 28 (6)	459 ** ± 26 (6)
60	58 ± 4 (6)	100 ± 2 (6)	158 ± 7 (6)	220 ± 13 (6)	279 ± 14 (6)	337 ± 15 (6)	382 ± 19 (6)	424 ± 17 (6)	459 ± 23 (6)	491 ± 24 (6)	434 ± 23 (6)
200	51 ** ± 4 (6)	92 ± 6 (6)	153 ± 10 (6)	217 ± 13 (6)	277 ± 18 (6)	336 ± 19 (6)	380 ± 21 (6)	421 ± 28 (6)	457 ± 32 (6)	486 ± 29 (6)	435 ± 28 (6)

Each value is mean and SD. (n): Number of animals weighed.
Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 6-1 Body weights of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning
< Administration period >

(g)

Dose (mg/kg/day)	Days of age 3	4	7	10	13	16	19	21	Gain 4-21
0	9.5 ± 0.3 (12)	11.6 ± 0.5 (12)	18.3 ± 0.9 (12)	25.9 ± 1.3 (12)	33.9 ± 1.8 (12)	41.1 ± 2.2 (12)	48.9 ± 2.7 (12)	57.2 ± 2.5 (12)	45.6 ± 2.4 (12)
20	9.5 ± 0.3 (12)	11.5 ± 0.4 (12)	18.3 ± 0.9 (12)	26.0 ± 1.5 (12)	33.8 ± 2.1 (12)	41.4 ± 2.9 (12)	49.6 ± 3.7 (12)	57.9 ± 3.6 (12)	46.3 ± 3.7 (12)
60	9.5 ± 0.3 (12)	11.7 ± 0.5 (12)	18.2 ± 0.8 (12)	25.8 ± 1.2 (12)	33.5 ± 2.5 (12)	40.6 ± 2.5 (12)	48.9 ± 3.0 (12)	57.2 ± 2.8 (12)	45.5 ± 2.7 (12)
200	9.5 ± 0.4 (12)	11.6 ± 0.6 (12)	16.2 ** ± 1.1 (12)	22.0 ** ± 1.2 (12)	28.3 ** ± 1.7 (12)	34.7 ** ± 2.2 (12)	42.0 ** ± 3.1 (12)	49.4 ** ± 3.4 (12)	37.7 ** ± 3.2 (12)

Each value is mean and SD. (n): Number of animals weighed.
Significantly different from control (** : $p<0.01$)

Table 6-2 Body weights of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning
< Post-administration period >

(g)

Dose (mg/kg/day)	Days of age 21	28	35	42	49	56	63	70	77	84	Gain 21-84
0	57 ± 2 (6)	93 ± 3 (6)	133 ± 3 (6)	163 ± 5 (6)	185 ± 7 (6)	208 ± 9 (6)	223 ± 14 (6)	238 ± 14 (6)	250 ± 12 (6)	264 ± 12 (6)	207 ± 12 (6)
20	58 ± 4 (6)	92 ± 5 (6)	132 ± 9 (6)	166 ± 10 (6)	185 ± 13 (6)	209 ± 16 (6)	225 ± 17 (6)	239 ± 19 (6)	252 ± 19 (6)	262 ± 20 (6)	204 ± 19 (6)
60	56 ± 3 (6)	92 ± 3 (6)	134 ± 3 (6)	165 ± 5 (6)	187 ± 7 (6)	211 ± 9 (6)	227 ± 11 (6)	245 ± 12 (6)	260 ± 14 (6)	271 ± 17 (6)	215 ± 15 (6)
200	49 ** ± 4 (6)	81 ** ± 7 (6)	123 * ± 8 (6)	156 ± 12 (6)	181 ± 14 (6)	205 ± 15 (6)	223 ± 20 (6)	239 ± 19 (6)	251 ± 21 (6)	260 ± 22 (6)	212 ± 20 (6)

Each value is mean and SD. (n): Number of animals weighed.
Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 7 Food consumption of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning
< Post-administration period >

(g)

Dose (mg/kg/day)	Days of age 28	35	42	49	56	63	70	77	84
0	17 ± 1 (6)	24 ± 1 (6)	28 ± 2 (6)	29 ± 1 (6)	34 ± 2 (6)	34 ± 2 (6)	36 ± 2 (6)	35 ± 2 (6)	37 ± 3 (6)
20	18 ± 1 (6)	26 ± 2 (6)	31 ± 2 (6)	34 ** ± 2 (6)	38 * ± 2 (6)	37 ± 2 (6)	39 ± 3 (6)	39 ± 3 (6)	41 ± 3 (6)
60	19 ± 2 (6)	26 ± 2 (6)	31 ± 2 (6)	33 * ± 2 (6)	36 ± 2 (6)	35 ± 3 (6)	37 ± 3 (6)	37 ± 4 (6)	38 ± 3 (6)
200	19 ± 1 (6)	26 * ± 2 (6)	32 * ± 2 (6)	35 ** ± 3 (6)	36 ± 3 (6)	36 ± 3 (6)	38 ± 4 (6)	37 ± 3 (6)	40 ± 2 (6)

Each value is mean and SD. (n): Number of animals weighed.
Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 8 Food consumption of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning
< Post-administration period >

(g)

Dose (mg/kg/day)	Days of age 28	35	42	49	56	63	70	77	84
0	17 ± 1 (6)	21 ± 1 (6)	23 ± 1 (6)	22 ± 3 (6)	23 ± 2 (6)	22 ± 4 (6)	24 ± 2 (6)	23 ± 2 (6)	24 ± 2 (6)
20	17 ± 2 (6)	21 ± 2 (6)	22 ± 2 (6)	22 ± 2 (6)	24 ± 2 (6)	24 ± 3 (6)	23 ± 2 (6)	24 ± 2 (6)	25 ± 2 (6)
60	17 ± 2 (6)	21 ± 1 (6)	23 ± 3 (6)	23 ± 1 (6)	25 ± 2 (6)	23 ± 3 (6)	24 ± 3 (6)	25 ± 1 (6)	25 ± 2 (6)
200	16 ± 1 (6)	21 ± 2 (6)	22 ± 2 (6)	23 ± 1 (6)	25 ± 1 (6)	25 ± 3 (6)	26 ± 3 (6)	24 ± 2 (6)	25 ± 3 (6)

Each value is mean and SD. (n): Number of animals weighed.

Table 9 - 1 Urinary findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	No. of animals	Color	Cloudy		Volume (mL/18hrs)	Specific gravity	pH							Protein				
		PY	−	+			5.0	6.0	6.5	7.0	7.5	8.0	8.5	−	±	+	++	+++
0	6	6	4	2	16.0 ± 5.7	1.047 ± 0.012						3	3			6		
20	6	6	5	1	15.2 ± 1.9	1.043 ± 0.006					1	2	3			6		
60	6	6	6		20.1 ± 6.5	1.046 ± 0.010						3	3			6		
200	6	6	6		16.2 ± 5.8	1.048 ± 0.013				1	1		4			6		

Dose (mg/kg)	No. of animals	Glucose					Ketone body					Occult blood					Urobilinogen				Bilirubin			
		−	±	+	++	+++	−	±	+	++	+++	−	±	+	++	+++	0.1	1	2	4	−	+	++	+++
0	6	6					5	1				6					6				6			
20	6	6					4	2				6					6				6			
60	6	6					4	2				6					6				6			
200	6	6					5	1				6					6				6			

Color : PY(pale yellow)
Cloudy : −(negligible), +(cloudy)
Protein : −(negligible), ±(15～30mg/dL), +(30mg/dL), ++(100mg/dL), +++(300mg/dL)
Glucose : −(negligible), ±(0.1g/dL), +(0.25g/dL), ++(0.5g/dL), +++(1g/dL)
Ketone body : −(negligible), ±(5mg/dL), +(15mg/dL), ++(40mg/dL), +++(80mg/dL)
Occult blood : −(negligible), ±(trace), +(slight), ++(moderate), +++(marked)
Urobilinogen : Ehrlich unit/dL
Bilirubin : −(negligible), +(slight), ++(moderate), +++(marked)

Table 9 - 2 Urinary findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	No. of animals	Erythrocytes				Leukocytes				Crystals: Mg				Crystals: Ca				Crystals: Ams			
		−	+	++	+++	−	+	++	+++	−	+	++	+++	−	+	++	+++	−	+	++	+++
0	6	6				6				2		3	1	6				6			
20	6	6				6				1	4	1		6				6			
60	6	6				6					1	3	2	6				6			
200	6	6				6					5	1		6				6			

Dose (mg/kg)	No. of animals	Epithelial cells: Sq				Epithelial cells: R			Epithelial cells: S			Casts: G		Casts: H		Casts: W		Fat globules		
		−	+	++	+++	−	+	++	−	+	++	−	+	−	+	−	+	−	+	++
0	6		6				6			6			6		6		6		6	
20	6		6				6			6			6		6		6		6	
60	6		6				6			6			6		6		6		6	
200	6		6				6			6			6		6		6		6	

− : Not observed; + : A few in some fields; ++ : A few in all fields; +++ : Many in all fields

Crystals
- Mg(ammonium magnesium phosphate)
- Ca(calcium phosphate)
- Ams(amorphous)

Epithelial cells
- Sq(squamous)
- R(round)
- S(spindle)

Casts
- G(granule)
- H(hyaline)
- W(waxy)

Table 10 - 1 Urinary findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	No. of animals	Color	Cloudy		Volume (mL/18hrs)	Specific gravity	pH							Protein				
		PY	−	+			5.0	6.0	6.5	7.0	7.5	8.0	8.5	−	±	+	++	+++
0	6	6	6		9.9 ± 4.1	1.045 ± 0.022						3	3	2	1	3		
20	6	6	5	1	7.6 ± 2.2	1.042 ± 0.020						5	1	2	3	1		
60	6	6	4	2	14.2 ± 6.2	1.053 ± 0.012						1	5		4	2		
200	6	6	6		10.8 ± 2.5	1.044 ± 0.012				1		2	3		5	1		

Dose (mg/kg)	No. of animals	Glucose					Ketone body					Occult blood					Urobilinogen				Bilirubin			
		−	±	+	++	+++	−	±	+	++	+++	−	±	+	++	+++	0.1	1	2	4	−	+	++	+++
0	6	6					6					6					6				6			
20	6	6					6					6					6				6			
60	6	6					6					6					6				6			
200	6	6					6					5	1				6				6			

Color : PY(pale yellow)
Cloudy : −(negligible), +(cloudy)
Protein : −(negligible), ±(15～30mg/dL), +(30mg/dL), ++(100mg/dL), +++(300mg/dL)
Glucose : −(negligible), ±(0.1g/dL), +(0.25g/dL), ++(0.5g/dL), +++(1g/dL)
Ketone body : −(negligible), ±(5mg/dL), +(15mg/dL), ++(40mg/dL), +++(80mg/dL)
Occult blood : −(negligible), ±(trace), +(slight), ++(moderate), +++(marked)
Urobilinogen : Ehrlich unit/dL
Bilirubin : −(negligible), +(slight), ++(moderate), +++(marked)

Table 10 - 2 Urinary findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	No. of animals	Erythrocytes				Leukocytes				Crystals: Mg				Crystals: Ca				Crystals: Ams			
		−	+	++	+++	−	+	++	+++	−	+	++	+++	−	+	++	+++	−	+	++	+++
0	6	6				6				3	1	2		6				6			
20	6	6				6				3	1	2		6				6			
60	6	6				6				1	4	1		6				6			
200	6	6				6				4		2		6				6			

Dose (mg/kg)	No. of animals	Epithelial cells: Sq				Epithelial cells: R			Epithelial cells: S			Casts: G		Casts: H		Casts: W		Fat globules		
		−	+	++	+++	−	+	++	−	+	++	−	+	−	+	−	+	−	+	++
0	6		5	1		6			6			6		6		6		6		
20	6		6			6			6			6		6		6		6		
60	6		6			6			6			6		6		6		6		
200	6		5	1		6			6			6		6		6		6		

− : Not observed; + : A few in some fields; ++ : A few in all fields; +++ : Many in all fields

Crystals
- Mg(ammonium magnesium phosphate)
- Ca(calcium phosphate)
- Ams(amorphous)

Epithelial cells
- Sq(squamous)
- R(round)
- S(spindle)

Casts
- G(granule)
- H(hyaline)
- W(waxy)

Table 11 Hematological findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	No. of animals	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	6	487 ± 21	9.5 ± 0.5	30.9 ± 1.5	63 ± 2	19.4 ± 0.9	30.6 ± 0.6	224 ± 17	13.6 ± 0.4	14.6 ± 0.3
20	6	484 ± 36	9.4 ± 0.9	30.4 ± 2.4	63 ± 4	19.4 ± 1.7	30.8 ± 0.9	215 ± 27	13.7 ± 0.3	14.9 ± 0.7
60	6	474 ± 27	9.3 ± 0.6	30.1 ± 1.8	63 ± 2	19.6 ± 0.7	30.8 ± 0.2	234 ± 19	13.5 ± 0.4	15.6 ± 1.0
200	6	500 ± 35	9.7 ± 0.7	31.5 ± 1.5	63 ± 2	19.3 ± 0.6	30.7 ± 0.9	228 ± 29	13.4 ± 0.2	14.8 ± 0.2

Dose (mg/kg)	No. of animals	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	6	17 ± 6	0 ± 0	0 ± 0	0 ± 0	15 ± 6	81 ± 6	4 ± 2	0 ± 0	152 ± 18
20	6	22 ± 10	0 ± 0	0 ± 0	0 ± 0	16 ± 8	82 ± 9	2 ± 1	0 ± 0	146 ± 19
60	6	24 ± 14	0 ± 0	1 ± 1	0 ± 0	16 ± 2	80 ± 4	3 ± 3	0 ± 0	159 ± 12
200	6	17 ± 4	0 ± 0	0 ± 1	0 ± 0	16 ± 2	81 ± 3	3 ± 1	0 ± 0	171 ± 24

Each value is expressed as mean±S.D.

Table 12 Hematological findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	No. of animals	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	6	513 ± 35	9.8 ± 1.1	31.5 ± 3.1	61 ± 4	19.1 ± 1.6	31.2 ± 0.6	198 ± 8	13.9 ± 0.4	14.2 ± 0.5
20	6	524 ± 31	10.3 ± 0.9	32.9 ± 2.8	63 ± 2	19.6 ± 0.9	31.3 ± 0.4	222 ± 30	14.0 ± 0.3	13.7 ± 0.5
60	6	525 ± 19	10.3 ± 0.5	33.0 ± 1.2	63 ± 3	19.6 ± 0.9	31.2 ± 0.7	202 ± 31	13.8 ± 0.5	14.1 ± 0.2
200	6	535 ± 24	10.8 ± 0.5	34.7 ± 1.5	65 ± 2	20.3 ± 0.7	31.2 ± 0.2	212 ± 42	13.7 ± 0.7	14.2 ± 0.7

Dose (mg/kg)	No. of animals	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	6	27 ± 9	0 ± 0	0 ± 0	0 ± 0	13 ± 4	85 ± 3	2 ± 2	0 ± 0	163 ± 27
20	6	23 ± 10	0 ± 0	0 ± 0	0 ± 0	7 ± 4	90 ± 4	3 ± 1	0 ± 0	151 ± 18
60	6	26 ± 8	0 ± 0	0 ± 0	0 ± 0	9 ± 3	89 ± 3	2 ± 1	0 ± 0	154 ± 17
200	6	32 ± 11	0 ± 0	0 ± 0	0 ± 0	11 ± 7	87 ± 9	1 ± 1	0 ± 0	167 ± 8

Each value is expressed as mean±S.D.

Table 13 Hematological findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	No. of animals	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	6	808 ± 45	15.4 ± 0.7	43.6 ± 1.9	54 ± 2	19.1 ± 0.7	35.3 ± 0.5	29 ± 9	13.0 ± 0.4	18.0 ± 1.3
20	6	815 ± 63	15.7 ± 1.1	44.5 ± 2.3	55 ± 2	19.3 ± 0.5	35.3 ± 1.1	34 ± 12	12.9 ± 0.3	17.2 ± 0.9
60	6	810 ± 27	15.3 ± 0.5	43.7 ± 1.2	54 ± 1	18.9 ± 0.6	35.0 ± 0.6	32 ± 11	12.8 ± 0.3	17.8 ± 0.9
200	6	808 ± 42	15.0 ± 0.9	43.1 ± 2.0	53 ± 2	18.6 ± 1.0	34.8 ± 0.7	35 ± 6	12.8 ± 0.6	17.3 ± 0.7

Dose (mg/kg)	No. of animals	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	6	63 ± 19	0 ± 0	1 ± 1	0 ± 1	14 ± 4	83 ± 5	2 ± 2	0 ± 0	145 ± 19
20	6	81 ± 12	0 ± 0	1 ± 1	0 ± 0	11 ± 7	88 ± 7	1 ± 1	0 ± 0	125 ± 6
60	6	83 ± 18	0 ± 0	0 ± 0	0 ± 0	12 ± 4	87 ± 5	1 ± 0	0 ± 0	129 ± 11
200	6	77 ± 17	0 ± 0	0 ± 0	0 ± 0	17 ± 4	83 ± 5	1 ± 1	0 ± 0	141 ± 16

Each value is expressed as mean±S.D.

Table 14 Hematological findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	No. of animals	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	6	793 ± 19	15.5 ± 0.5	43.5 ± 1.5	55 ± 2	19.5 ± 0.7	35.5 ± 0.3	25 ± 5	12.9 ± 0.5	15.8 ± 0.5
20	6	806 ± 55	15.5 ± 0.8	43.4 ± 2.3	54 ± 2	19.2 ± 0.7	35.6 ± 0.3	22 ± 4	13.1 ± 0.7	15.6 ± 1.0
60	6	789 ± 27	14.9 ± 0.5	42.4 ± 1.4	54 ± 1	18.9 ± 0.4	35.2 ± 0.3	21 ± 4	12.6 ± 0.1	15.5 ± 0.9
200	6	810 ± 24	15.5 ± 0.4	43.7 ± 1.0	54 ± 1	19.1 ± 0.4	35.5 ± 0.2	21 ± 4	12.6 ± 0.3	16.4 ± 1.4

Dose (mg/kg)	No. of animals	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	6	45 ± 15	0 ± 0	1 ± 2	0 ± 0	11 ± 4	86 ± 4	2 ± 1	0 ± 0	135 ± 11
20	6	44 ± 14	0 ± 0	1 ± 1	0 ± 0	11 ± 3	87 ± 2	2 ± 1	0 ± 0	140 ± 11
60	6	48 ± 11	0 ± 0	1 ± 2	0 ± 0	8 ± 4	90 ± 4	1 ± 1	0 ± 0	122 ± 13
200	6	33 ± 7	0 ± 0	1 ± 1	0 ± 0	10 ± 3	88 ± 4	2 ± 1	0 ± 0	146 ± 23

Each value is expressed as mean±S.D.

Table 15 Blood biochemical findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	No. of animals	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	6	431 ± 102	115 ± 5	25 ± 3	997 ± 68	0.98 ± 0.17	88 ± 22	4.75 ± 0.11	2.98 ± 0.12	1.69 ± 0.17	79 ± 5	36 ± 15
20	6	502 ± 93	124 ± 17	27 ± 7	994 ± 82	0.90 ± 0.18	85 ± 9	4.76 ± 0.19	2.99 ± 0.14	1.70 ± 0.17	75 ± 11	33 ± 6
60	6	395 ± 83	117 ± 12	22 ± 2	1034 ± 211	0.98 ± 0.17	93 ± 10	4.94 ± 0.15	3.03 ± 0.12	1.59 ± 0.07	72 ± 5	27 ± 4
200	6	535 ± 104	131 ± 9	24 ± 4	1050 ± 273	1.33** ± 0.21	84 ± 17	4.99* ± 0.08	3.10 ± 0.12	1.65 ± 0.12	69 ± 10	24 ± 4

Dose (mg/kg)	No. of animals	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	6	123 ± 8	133 ± 11	9.2 ± 3.2	0.42 ± 0.06	0.41 ± 0.03	10.0 ± 0.2	9.1 ± 0.3	140 ± 1	7.22 ± 0.49	108 ± 1
20	6	119 ± 15	131 ± 6	9.6 ± 5.2	0.42 ± 0.02	0.40 ± 0.01	9.8 ± 0.3	9.1 ± 0.5	141 ± 1	6.73 ± 0.53	108 ± 2
60	6	113 ± 6	140 ± 5	10.4 ± 3.1	0.42 ± 0.04	0.40 ± 0.02	9.9 ± 0.2	9.0 ± 0.3	142 ± 1	6.68 ± 0.70	108 ± 1
200	6	108 ± 13	142 ± 9	14.8 ± 4.4	0.41 ± 0.04	0.40 ± 0.03	9.8 ± 0.1	9.2 ± 0.5	140 ± 1	6.84 ± 0.41	107 ± 1

Each value is expressed as mean±S.D.
Significantly different from control(*:P<0.05, **:P<0.01)

Table 16 Blood biochemical findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	No. of animals	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	6	492 ± 172	122 ± 17	19 ± 3	1028 ± 125	0.92 ± 0.18	90 ± 13	4.92 ± 0.15	3.10 ± 0.17	1.71 ± 0.18	79 ± 20	29 ± 3
20	6	467 ± 123	119 ± 13	20 ± 5	914 ± 159	0.87 ± 0.19	93 ± 15	4.87 ± 0.10	3.03 ± 0.07	1.66 ± 0.05	72 ± 9	25 ± 3
60	6	508 ± 85	116 ± 5	19 ± 3	922 ± 140	0.98 ± 0.19	84 ± 14	4.89 ± 0.14	3.08 ± 0.10	1.71 ± 0.09	76 ± 7	28 ± 5
200	6	507 ± 165	121 ± 13	20 ± 4	922 ± 175	1.28* ± 0.37	98 ± 10	5.06 ± 0.14	3.19 ± 0.07	1.71 ± 0.08	84 ± 13	27 ± 4

Dose (mg/kg)	No. of animals	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	6	117 ± 24	130 ± 7	12.9 ± 3.2	0.43 ± 0.12	0.39 ± 0.03	10.0 ± 0.2	9.6 ± 0.2	142 ± 1	7.52 ± 0.35	108 ± 2
20	6	111 ± 10	131 ± 15	13.7 ± 4.5	0.40 ± 0.02	0.41 ± 0.02	10.0 ± 0.2	9.3 ± 0.6	141 ± 1	7.35 ± 0.57	108 ± 1
60	6	114 ± 10	136 ± 7	13.0 ± 2.5	0.55 ± 0.26	0.40 ± 0.02	10.0 ± 0.3	9.5 ± 0.4	142 ± 1	7.03 ± 0.45	107 ± 1
200	6	125 ± 15	134 ± 8	14.6 ± 4.0	0.41 ± 0.02	0.37 ± 0.04	9.8 ± 0.1	9.3 ± 0.3	141 ± 2	6.77 ± 0.68	109 ± 2

Each value is expressed as mean±S.D.
Significantly different from control(*:P<0.05)

Table 17 Blood biochemical findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	No. of animals	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	6	368 ± 226	73 ± 5	44 ± 9	565 ± 98	0.85 ± 0.15	53 ± 15	6.33 ± 0.23	3.21 ± 0.12	1.03 ± 0.05	77 ± 12	77 ± 32
20	6	291 ± 53	74 ± 11	37 ± 4	494 ± 94	0.75 ± 0.20	57 ± 13	6.22 ± 0.22	3.29 ± 0.16	1.13 ± 0.09	72 ± 8	124* ± 36
60	6	266 ± 60	75 ± 8	39 ± 4	535 ± 56	0.70 ± 0.12	71 ± 28	6.29 ± 0.21	3.27 ± 0.15	1.09 ± 0.13	63 ± 10	81 ± 16
200	6	297 ± 98	73 ± 10	39 ± 9	549 ± 83	0.78 ± 0.15	66 ± 29	6.26 ± 0.13	3.23 ± 0.14	1.07 ± 0.07	75 ± 10	81 ± 27

Dose (mg/kg)	No. of animals	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	6	117 ± 10	146 ± 3	15.2 ± 3.4	0.55 ± 0.06	0.34 ± 0.04	10.1 ± 0.3	7.4 ± 0.4	143 ± 2	4.57 ± 0.37	103 ± 2
20	6	121 ± 9	163** ± 7	14.4 ± 1.8	0.59 ± 0.04	0.29 ± 0.03	10.1 ± 0.2	7.4 ± 0.1	143 ± 1	4.75 ± 0.11	102 ± 1
60	6	103 ± 10	157 ± 9	14.4 ± 2.5	0.56 ± 0.04	0.32 ± 0.04	10.1 ± 0.3	7.2 ± 0.3	143 ± 1	4.56 ± 0.25	102 ± 1
200	6	116 ± 11	161** ± 10	13.9 ± 2.3	0.61 ± 0.04	0.31 ± 0.04	10.1 ± 0.1	7.2 ± 0.1	144 ± 2	4.52 ± 0.32	102 ± 2

Each value is expressed as mean±S.D.
Significantly different from control(*:P<0.05, **:P<0.01)

Table 18 Blood biochemical findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	No. of animals	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	6	329 ± 148	75 ± 13	32 ± 8	365 ± 89	1.61 ± 0.35	400 ± 165	6.43 ± 0.48	3.61 ± 0.22	1.28 ± 0.07	84 ± 12	28 ± 7
20	6	316 ± 144	65 ± 8	27 ± 5	341 ± 101	1.13 ± 0.31	433 ± 111	6.58 ± 0.30	3.77 ± 0.20	1.34 ± 0.10	81 ± 11	29 ± 10
60	6	350 ± 71	78 ± 10	33 ± 7	364 ± 98	1.41 ± 0.24	386 ± 180	6.46 ± 0.39	3.66 ± 0.20	1.32 ± 0.10	80 ± 14	23 ± 16
200	6	376 ± 137	71 ± 9	27 ± 3	337 ± 81	1.56 ± 0.63	379 ± 144	6.56 ± 0.41	3.68 ± 0.29	1.28 ± 0.10	90 ± 14	22 ± 5

Dose (mg/kg)	No. of animals	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	6	137 ± 17	138 ± 8	13.2 ± 2.3	0.58 ± 0.05	0.32 ± 0.04	10.2 ± 0.3	7.0 ± 0.4	144 ± 2	4.29 ± 0.15	104 ± 1
20	6	140 ± 16	138 ± 11	14.5 ± 2.2	0.60 ± 0.03	0.30 ± 0.02	10.4 ± 0.1	6.9 ± 0.3	144 ± 1	4.25 ± 0.29	104 ± 1
60	6	136 ± 24	133 ± 20	14.4 ± 2.3	0.63 ± 0.05	0.31 ± 0.05	10.3 ± 0.2	7.3 ± 0.8	143 ± 1	4.31 ± 0.30	104 ± 1
200	6	147 ± 14	136 ± 6	12.7 ± 1.5	0.58 ± 0.04	0.31 ± 0.03	10.5 ± 0.4	7.2 ± 0.4	144 ± 1	4.41 ± 0.11	104 ± 1

Each value is expressed as mean±S.D.

Table 19 Incidence of necropsy findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning

			<22 days of age>				<85 days of age>			
		Dose(mg/kg)	0	20	60	200	0	20	60	200
Organ	: Findings	No. of animals	6	6	6	6	6	6	6	6
No abnormalities detected			6	6	6	6	6	6	6	6

Table 20 Incidence of necropsy findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning

				<22 days of age>				<85 days of age>			
			Dose(mg/kg)	0	20	60	200	0	20	60	200
Organ	: Findings	Grade	No. of animals	6	6	6	6	6	6	6	6
Lung	: Dark red spots	−		6	6	6	6	6	6	5	6
		+		0	0	0	0	0	0	1	0

− : Negative; + : Slight

Table 21 Absolute and relative organ weights of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

	Dose (mg/kg)	No.of Animals	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (mg)	Heart (mg)	Lung (mg)	Thymus (mg)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Testis (mg)	Prost.† (mg)	Epidid. (mg)
Absolute	0	6	55.0 ±5.3	1.54 ±0.05	1.84 ±0.21	0.66 ±0.09	233 ±61	314 ±36	449 ±28	246 ±29	9.0 ±1.5	3.1 ±0.3	21.9 ±3.7	320 ±42	86.8 ±10.6	54.7 ±5.6
	20	6	55.4 ±4.1	1.51 ±0.08	1.82 ±0.18	0.65 ±0.05	220 ±30	313 ±53	468 ±41	233 ±15	10.3 ±1.2	3.0 ±0.3	22.3 ±5.0	308 ±23	80.5 ±14.6	51.6 ±8.3
	60	6	54.7 ±2.4	1.54 ±0.03	1.91 ±0.09	0.63 ±0.03	194 ±30	326 ±14	472 ±37	230 ±28	9.6 ±0.9	3.0 ±0.2	21.2 ±2.1	326 ±27	82.0 ±12.9	53.6 ±8.9
	200	6	48.0 * ±5.6	1.48 ±0.06	1.96 ±0.21	0.60 ±0.06	167 ±49	290 ±28	400 ±67	204 ±28	9.0 ±1.0	2.9 ±0.2	20.0 ±5.1	281 ±37	76.9 ±12.5	49.1 ±5.3
Relative @	0	6	55.0 ±5.3	2.81 ±0.22	3.33 ±0.12	1.19 ±0.07	420 ±79	571 ±45	818 ±43	447 ±40	16.4 ±2.1	5.6 ±0.2	39.6 ±3.8	581 ±39	158.9 ±23.9	99.7 ±9.2
	20	6	55.4 ±4.1	2.74 ±0.16	3.28 ±0.14	1.16 ±0.03	396 ±34	564 ±79	851 ±118	421 ±32	18.7 ±2.4	5.4 ±0.5	40.4 ±9.7	558 ±54	145.4 ±25.1	93.4 ±15.3
	60	6	54.7 ±2.4	2.81 ±0.10	3.49 ±0.11	1.16 ±0.05	355 ±48	596 ±29	861 ±44	421 ±47	17.6 ±2.1	5.5 ±0.4	38.7 ±3.1	595 ±37	149.6 ±21.9	97.7 ±13.1
	200	6	48.0 * ±5.6	3.12 * ±0.27	4.08 ** ±0.10	1.26 ±0.05	344 ±65	606 ±40	831 ±70	425 ±27	19.0 ±2.8	6.0 ±0.4	41.3 ±6.4	587 ±49	161.2 ±25.3	103.3 ±15.8

† : Total weights of the prostate and seminal vesicle
Each value is expressed as mean ± S.D.
@ : Relative organ weight per 100g body weight
Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 22 Absolute and relative organ weights of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

	Dose (mg/kg)	No.of Animals	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (mg)	Heart (mg)	Lung (mg)	Thymus (mg)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Ovary (mg)	Uterus (mg)
Absolute	0	6	51.4 ±3.0	1.48 ±0.05	1.62 ±0.13	0.63 ±0.04	176 ±29	293 ±23	436 ±44	222 ±15	9.3 ±1.3	3.3 ±0.3	23.0 ±1.8	15.6 ±2.2	39.1 ±4.6
	20	6	51.9 ±3.3	1.48 ±0.03	1.72 ±0.12	0.63 ±0.06	197 ±28	300 ±36	431 ±33	234 ±39	9.4 ±1.7	3.1 ±0.2	23.3 ±2.3	15.9 ±1.2	39.4 ±9.9
	60	6	52.1 ±3.3	1.45 ±0.03	1.79 ±0.08	0.64 ±0.06	193 ±19	287 ±21	427 ±22	225 ±23	10.1 ±0.8	3.3 ±0.2	24.2 ±4.3	15.4 ±2.1	42.4 ±3.1
	200	6	44.3 ** ±2.5	1.40 * ±0.07	1.69 ±0.10	0.57 ±0.05	156 ±17	263 ±17	389 ±15	193 ±34	8.8 ±1.0	2.8 ** ±0.2	19.4 ±2.6	14.5 ±3.5	39.7 ±5.3
Relative @	0	6	51.4 ±3.0	2.88 ±0.23	3.16 ±0.15	1.23 ±0.05	341 ±42	572 ±43	849 ±75	434 ±42	18.3 ±3.0	6.5 ±0.6	44.7 ±2.6	30.5 ±5.2	75.9 ±6.7
	20	6	51.9 ±3.3	2.87 ±0.18	3.31 ±0.15	1.20 ±0.04	379 ±44	577 ±50	831 ±52	449 ±60	18.1 ±3.2	5.9 ±0.4	44.9 ±4.9	30.6 ±3.0	75.4 ±15.7
	60	6	52.1 ±3.3	2.80 ±0.15	3.43 ** ±0.11	1.22 ±0.05	370 ±24	552 ±29	821 ±14	432 ±32	19.3 ±1.1	6.3 ±0.5	46.5 ±8.0	29.7 ±3.5	81.5 ±3.8
	200	6	44.3 ** ±2.5	3.17 * ±3.20	3.82 ** ±0.11	1.27 ±0.05	355 ±55	596 ±44	881 ±31	435 ±58	20.0 ±1.7	6.2 ±0.4	43.7 ±4.0	33.1 ±9.6	89.9 ±12.2

Each value is expressed as mean ± S.D.
@ : Relative organ weight per 100g body weight
Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 23 Absolute and relative organ weights of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

	Dose (mg/kg)	No.of Animals	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (g)	Heart (g)	Lung (g)	Thymus (g)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Testis (g)	Prost. (g)	Semi.v (g)	Epidid. (g)
Absolute	0	6	422 ±27	2.09 ±0.06	12.47 ±1.01	2.88 ±0.36	0.86 ±0.09	1.29 ±0.14	1.35 ±0.08	0.46 ±0.06	29.8 ±2.3	13.7 ±1.5	62.0 ±4.6	3.32 ±0.21	0.51 ±0.12	1.62 ±0.23	1.15 ±0.11
	20	6	477 ** ±30	2.03 ±0.09	14.25 ±1.11	2.96 ±0.16	0.92 ±0.15	1.39 ±0.07	1.50 ±0.16	0.56 ±0.06	29.9 ±3.1	13.5 ±1.3	70.1 ±5.6	3.28 ±0.28	0.58 ±0.11	1.80 ±0.18	1.17 ±0.12
	60	6	454 ±20	2.08 ±0.06	13.27 ±1.31	2.84 ±0.15	0.95 ±0.07	1.44 ±0.13	1.44 ±0.13	0.49 ±0.07	27.2 ±3.8	13.6 ±0.7	65.0 ±6.6	3.50 ±0.28	0.62 ±0.09	1.72 ±0.14	1.21 ±0.05
	200	6	446 ±30	2.02 ±0.07	13.52 ±1.43	2.83 ±0.19	0.88 ±0.07	1.39 ±0.09	1.35 ±0.06	0.49 ±0.05	30.2 ±3.3	14.0 ±1.9	67.2 ±20.3	3.08 ±0.26	0.62 ±0.11	1.80 ±0.13	1.16 ±0.08
Relative @	0	6	422 ±27	0.50 ±0.03	2.95 ±0.16	0.68 ±0.05	0.20 ±0.02	0.31 ±0.02	0.32 ±0.01	0.11 ±0.01	7.1 ±0.4	3.2 ±0.2	14.8 ±2.0	0.79 ±0.05	0.12 ±0.03	0.38 ±0.05	0.27 ±0.01
	20	6	477 ** ±30	0.43 ** ±0.03	2.99 ±0.15	0.62 ±0.03	0.19 ±0.03	0.29 ±0.01	0.32 ±0.03	0.12 ±0.01	6.3 ±0.4	2.8 * ±0.3	14.7 ±0.8	0.69 * ±0.04	0.12 ±0.02	0.38 ±0.03	0.25 ±0.02
	60	6	454 ±20	0.46 ±0.01	2.92 ±0.17	0.63 ±0.03	0.21 ±0.02	0.32 ±0.02	0.32 ±0.02	0.11 ±0.02	6.0 * ±0.8	3.0 ±0.2	14.3 ±0.9	0.77 ±0.06	0.14 ±0.02	0.38 ±0.04	0.27 ±0.01
	200	6	446 ±30	0.45 * ±0.03	3.03 ±0.26	0.64 ±0.06	0.20 ±0.02	0.31 ±0.02	0.30 ±0.02	0.11 ±0.02	6.8 ±0.6	3.1 ±0.3	14.9 ±3.4	0.69 * ±0.07	0.14 ±0.02	0.40 ±0.03	0.26 ±0.02

Each value is expressed as mean ± S.D.
@ : Relative organ weight per 100g body weight
Significantly different from control (* : $p<0.05$; ** : $p<0.01$)

Table 24 Absolute and relative organ weights of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

	Dose (mg/kg)	No.of Animals	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (g)	Heart (g)	Lung (g)	Thymus (g)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Ovary (mg)	Uterus (g)
Absolute	0	6	242 ±10	1.93 ±0.09	6.56 ±0.47	1.80 ±0.11	0.56 ±0.07	0.84 ±0.03	1.04 ±0.07	0.36 ±0.04	25.8 ±2.3	14.8 ±3.6	66.0 ±9.2	81.7 ±15.4	0.66 ±0.37
	20	6	240 ±19	1.91 ±0.06	6.48 ±0.76	1.77 ±0.15	0.51 ±0.05	0.86 ±0.05	1.00 ±0.04	0.34 ±0.04	23.6 ±2.1	14.4 ±1.7	65.3 ±6.1	77.9 ±8.0	0.63 ±0.27
	60	6	251 ±13	1.92 ±0.06	6.95 ±0.55	1.75 ±0.10	0.58 ±0.07	0.87 ±0.07	1.06 ±0.09	0.41 ±0.05	24.6 ±3.5	17.0 ±1.1	68.9 ±7.7	87.0 ±18.2	0.56 ±0.17
	200	6	238 ±19	1.84 ±0.04	6.54 ±0.49	1.76 ±0.08	0.54 ±0.04	0.83 ±0.05	1.04 ±0.08	0.41 ±0.10	23.6 ±2.1	14.5 ±1.8	66.9 ±7.6	75.0 ±11.4	0.69 ±0.34
Relative @	0	6	242 ±10	0.80 ±0.05	2.71 ±0.17	0.74 ±0.04	0.23 ±0.03	0.35 ±0.01	0.43 ±0.03	0.15 ±0.01	10.7 ±1.1	6.1 ±1.4	27.2 ±3.3	33.8 ±6.7	0.27 ±0.14
	20	6	240 ±19	0.80 ±0.07	2.70 ±0.14	0.74 ±0.03	0.21 ±0.01	0.36 ±0.01	0.42 ±0.04	0.14 ±0.01	9.9 ±1.2	6.0 ±0.4	27.4 ±2.7	32.6 ±3.9	0.27 ±0.11
	60	6	251 ±13	0.77 ±0.03	2.77 ±0.14	0.70 ±0.04	0.23 ±0.02	0.35 ±0.02	0.42 ±0.02	0.17 ±0.02	9.8 ±1.2	6.8 * ±0.2	27.5 ±3.0	34.6 ±6.4	0.22 ±0.07
	200	6	238 ±19	0.78 ±0.07	2.75 ±0.05	0.74 ±0.05	0.23 ±0.02	0.35 ±0.02	0.44 ±0.03	0.17 ±0.04	10.0 ±0.9	6.1 ±0.5	28.1 ±1.8	31.9 ±6.9	0.29 ±0.13

Each value is expressed as mean ± S.D.
@ : Relative organ weight per 100g body weight
Significantly different from control (* : $p<0.05$)

Table 25 Incidence of histopathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Organ	: Findings	Dose(mg/kg) Grade	0 No. of animals 6	20 6	60 6	200 6
Lumg	: Metaplasia, osseous	-	6	—	—	5
		+	0	—	—	1
Liver	: Hematopoiesis, extra-medullary	-	0	0	0	0
		+	6	6	6	6
	Hypertrophy, hepatocyte, centrilobular	-	6	6	6	2
		+	0	0	0	4 *
Kidney	: Cyst, solitary	-	4	—	—	3
		+	2	—	—	3
	Basophilic tubules	-	0	—	—	1
		+	6	—	—	5
	Fibrosis, focal	-	5	—	—	6
		+	1	—	—	0
Thymus	: Hemorrhage	-	5	—	—	6
		+	1	—	—	0
Spleen	: Hematopoiesis, extra-medullary	-	0	—	—	0
		+	1	—	—	1
		++	5	—	—	5

- : Negative; + : Slight; ++ : Moderate; — : Not examined
Significantly different from control (* : $p<0.05$)
No abnormalities were detected in the organs of the brain, pituitary, thyroid, parathyroid, trachea, heart, stomach, intestine, pancreas, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle from control and 200mg/kg groups.

Table 26 Incidence of histopathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Organ	: Findings	Dose(mg/kg) Grade	0 No. of animals 6	20 6	60 6	200 6
Lung	: Accumulation, foam cell	-	5	—	—	6
		+	1	—	—	0
	Hemorrhage	-	5	—	—	6
		+	1	—	—	0
	Metaplasia, osseous	-	6	—	—	5
		+	0	—	—	1
Liver	: Hematopoiesis, extra-medullary	-	0	0	0	1
		+	6	6	6	5
	Hypertrophy, hepatocyte, centrilobular	-	6	6	5	3
		+	0	0	1	3
Stomach	: Dilatation, fundic glandular lumen, glandular stomach	-	6	—	—	5
		+	0	—	—	1
Kidney	: Cyst, solitary	-	5	—	—	5
		+	1	—	—	1
	Basophilic tubules	-	0	—	—	2
		+	6	—	—	4
	Cellular infiltration, neutrophil, pelvic epithelium	-	6	—	—	5
		+	0	—	—	1
Spleen	: Hematopoiesis, extra-medullary	-	0	—	—	0
		+	3	—	—	2
		++	3	—	—	4

- : Negative; + : Slight; ++ : Moderate; — : Not examined
No abnormalities were detected in the organs of the brain, pituitary, thymus, thyroid, parathyroid, trachea, heart, intestine, pancreas, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus from control and 200mg/kg groups.

Table 27 Incidence of histopathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

Organ	: Findings	Dose(mg/kg) Grade	0 No. of animals 6	20 6	60 6	200 6
Lung	: Mineralization, artery	−	4	—	—	5
		+	2	—	—	1
Liver	: Microgranuloma	−	5	—	—	6
		+	1	—	—	0
	Degeneration, fatty, hepatocyte, periportal	−	6	—	—	5
		+	0	—	—	1
Pancreas	: Cellular infiltration, lymphocyte, focal	−	5	—	—	5
		+	1	—	—	1
	Deposit, brown pigment, macrophage	−	6	—	—	5
		+	0	—	—	1
Kidney	: Cyst, solitary	−	6	—	—	4
		+	0	—	—	2
	Basophilic tubules	−	4	—	—	4
		+	2	—	—	2
	Eosinophilic body, proximal tubular epithelium	−	6	—	—	5
		+	0	—	—	1
	Hyaline droplet, proximal tubular epithelium	−	0	—	—	0
		+	6	—	—	6
	Meneralization, cortex	−	5	—	—	6
		+	1	—	—	0
Prostate	: Cellular infiltration, lymphocyte, interstitium	−	5	—	—	6
		+	1	—	—	0
Spleen	: Hematopoiesis, extramedullary	−	0	—	—	0
		+	6	—	—	6
	Deposit, brown pigment	−	0	—	—	0
		+	6	—	—	6

− : Negative; + : Slight; — : Not examined

No abnormalities were detected in the organs of the brain, pituitary, thymus, thyroid, parathyroid, trachea, heart, stomach, intestine, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis and epididymis from control and 200mg/kg groups.

Table 28 Incidence of histopathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

Organ	: Findings	Dose(mg/kg) Grade	0 No. of animals 6	20 6	60 6	200 6
Lung	: Hemorrhage	-	6	—	0/1[a]	6
		+	0	—	1/1	0
	Mineralization, artery	-	4	—	0/1	3
		+	2	—	0/1	3
Liver	: Microgranuloma	-	5	—	—	5
		+	1	—	—	1
	Necrosis, focal	-	5	—	—	6
		+	1	—	—	0
Kidney	: Basophilic tubules	-	6	—	—	5
		+	0	—	—	1
Pituitary	: Cyst, Rathke's pouch, anterior lobe	-	6	—	—	5
		+	0	—	—	1
Spleen	: Hematopoiesis, extra-medullary	-	0	—	—	0
		+	6	—	—	6
	Deposit, brown pigment	-	0	—	—	0
		+	6	—	—	6

- : Negative; + : Slight; — : Not examined
a : Examined the lung with a macroscopic abnormality
No abnormalities were detected in the organs of the brain, thymus, thyroid, parathyroid, trachea, heart, stomach, intestine, pancreas, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus from control and 200mg/kg groups.

2-*tert*-ブチルフェノールのラット新生児における哺育期投与試験

（試験番号：98-095）

報告書　添付資料B

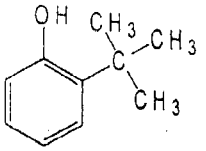
（個体別表等）

財団法人　畜産生物科学安全研究所

Appendix 1 Test article characterization

1. Chemical name (synonym) : 2-*tert*-Butylphenol (*o*-*tert*-butylphenol)
2. CAS Registry No. : 88-18-6
3. Lot No. : C169
4. Purity (impurity) : 99.97% (phenol, 0.03wt%)
5. Supplier : DAINIPPON INKI CHEMICAL Co., Ltd. (631 Sakato Sakura-shi, Chiba, Japan)
6. Day of reception : November 11, 1998
7. Amount : 2.0kg
8. Physico-chemical characterization

Structural formura :



Molecular formura : $C_{10}H_{14}O$

Molecular weight : 150.22

Appearance at ordinary temperature

: Liqid, colorless, sweet-smelling

Melting point : − 7 ℃

Boilinng point : 224℃

Vapor pressure : 13Pa/25℃

Specific gravity : 0.98/25 ℃

Solubility : Oil-solubility

9. Preservation : 4℃, Dark place and sealed (N_2 gas was enclosed)

Appendix 2 Test article stability

The purity of the test article was analysed after the termination of the study, and the datum obtained was compared with that obtained by analysis before the initiation of the study for stability. Analyses were made by the DAINIPPON INKI CHEMICAL Co., Ltd. (631 Sakato, Sakura-shi, Chiba, Japan)

Test article : 2-*tert*-Butylphenol

Lot number : C169

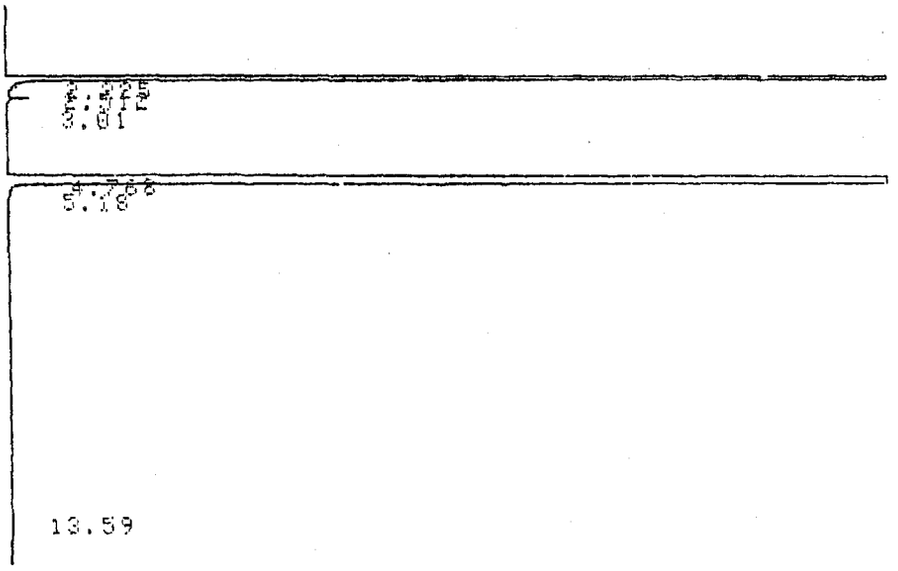
Method : GC method

Results :

	Date of analysis	Purity
Before the initiation of the study	October 2, 1998	99.97%
After the termination of the study	November 16, 1999	99.99%

Conclusion : The test article was concluded to be stable during the study period.

2-tert-ブチルフェノールのガスクロマトグラム:
試験開始前（平成10年10月２日）

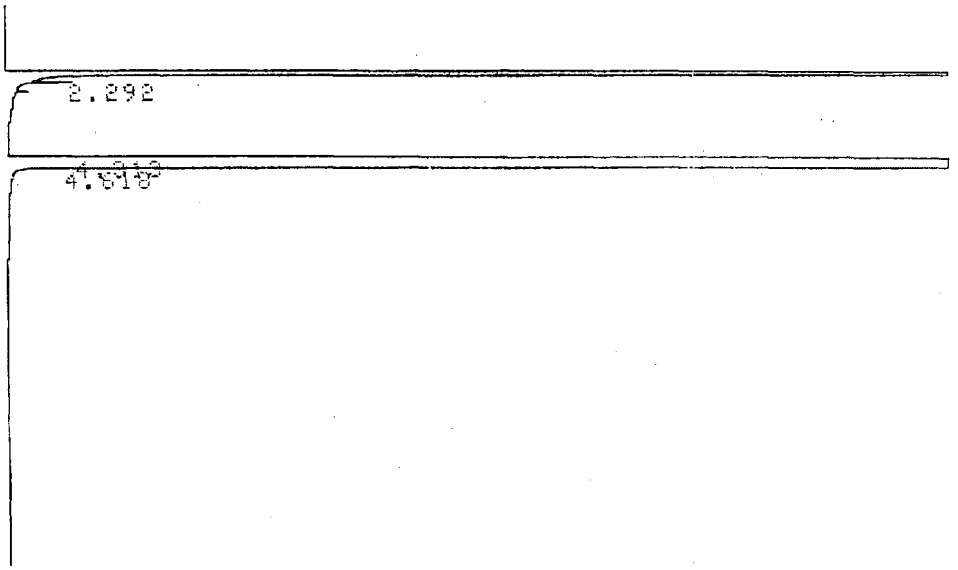


CHROMATOPAC C-R3A FILE 1
SAMPLE NO 0 METHOD 41
REPORT NO 6802

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.512	38			0.0319	フェノール
2	4.768	120338	S		99.9681	OTBP
	TOTAL	120376			100	

2-tert-ブチルフェノールのガスクロマトグラム:
投与終了後（平成11年11月16日）

OTBP C169
START



CHROMATOPAC C-R3A FILE 1
SAMPLE NO 0 METHOD 41
REPORT NO 7326

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.292	26			0.0099	
2	4.313	266082	S		99.9901	
	TOTAL	266109			100	

Appendix 3 Analysis of concentrations of the test article in the dose solutions

Test article : 2-*tert*-Butylphenol (lot No. C169)

Nominal concentrations of the test article in the dose solutions
: 0.67, 2.00 and 6.67w/v%

Method : GC method

Results :

Date of preparation	Nominal concentrations (w/v%)		
	0.67	2.0	6.67
June 25, 1998 (Analytical value)	0.67%	2.0%	9.73%

Each value expressed as mean from 3 analyses

Appendix 4 Animal numbers of foster mother rats and those of pups reared by them

Foster mothers	Pups	
No. 601	Males : Nos. 001, 013, 025, 037;	Femals : Nos. 501, 513, 525, 537
No. 602	Males : Nos. 002, 014, 026, 038;	Femals : Nos. 502, 514, 526, 538
No. 603	Males : Nos. 003, 015, 027, 039;	Femals : Nos. 503, 515, 527, 539
No. 604	Males : Nos. 004, 016, 028, 040;	Femals : Nos. 504, 516, 528, 540
No. 605	Males : Nos. 005, 017, 029, 041;	Femals : Nos. 505, 517, 529, 541
No. 606	Males : Nos. 006, 018, 030, 042;	Femals : Nos. 506, 518, 530, 542
No. 607	Males : Nos. 007, 019, 031, 043;	Femals : Nos. 507, 519, 531, 543
No. 608	Males : Nos. 008, 020, 032, 044;	Femals : Nos. 508, 520, 532, 544
No. 609	Males : Nos. 009, 021, 033, 045;	Femals : Nos. 509, 521, 533, 545
No. 610	Males : Nos. 010, 022, 034, 046;	Femals : Nos. 510, 522, 534, 546
No. 611	Males : Nos. 011, 023, 035, 047;	Femals : Nos. 511, 523, 535, 547
No. 612	Males : Nos. 012, 024, 036, 048;	Femals : Nos. 512, 524, 536, 548

Appendix 5-1 Environmental condition of animal room

Establishment : Temperature, 22±3℃ ; Relative humidity, 55±10%

	Date	Comment	Animal room No. 1 Range of temperature(℃)	Range of humidity(%)
June	17, 1999	Arrival of animals	22.0 – 22.3	53 – 54
	18,		21.7 – 21.9	54
	19,		21.7	54 – 55
	20,		21.6 – 21.7	55
	21,		21.7 – 22.0	54 – 55
	22,		21.7 – 21.8	52
	23,		21.6 – 22.0	52 – 53
	24,		21.7 – 21.9	52 – 55
	25,		21.8 – 21.9	52
	26,		21.8 – 22.0	52
	27,	Grouping, beginning of administration	21.8 – 22.0	53 – 55
	28,		21.7 – 21.8	53 – 54
	29,		21.7 – 22.0	53 – 54
	30,		21.8 – 22.0	54 – 55
July	1,		21.8 – 22.2	52 – 54
	2,		21.9 – 22.2	52 – 53
	3,		22.0	52 – 54
	4,		22.0 – 22.5	53 – 55
	5,		21.9 – 22.0	53 – 54
	6,		21.7 – 21.8	53
	7,		21.7 – 22.2	53 – 54
	8,		21.8 – 22.2	52 – 53
	9,		21.8	53 – 54
	10,		21.9 – 22.3	53 – 54
	11,		21.9 – 22.0	53 – 54
	12,		21.9 – 22.2	55 – 56
	13,		21.9 – 22.0	53 – 55
	14,		22.0 – 22.2	55 – 56
	15,		22.0 – 22.2	55 – 56
	16,	Terminal kill after administration period	22.0 – 22.3	54 – 56
	17,		22.2 – 22.4	53 – 56
	18,		22.2 – 22.4	54

Appendix 5-2 Environmental condition of animal room

Establishment : Temperature, 22±3℃ ; Relative humidity, 55±10%

	Date	Comment	Animal room No. 1 Range of temperature(℃)	Range of humidity(%)
July	19, 1999		22.1 – 22.2	54 – 55
	20,		22.1 – 22.2	54 – 55
	21,		22.2 – 22.4	55 – 56
	22,		22.0 – 22.2	54 – 55
	23,		22.0 – 22.5	55 – 58
	24,		22.2 – 22.6	53 – 55
	25,		22.2 – 22.6	54 – 55
	26,		22.2 – 22.7	54 – 59
	27,		22.5	55 – 60
	28,		22.2 – 22.6	55 – 59
	29,		22.1 – 22.6	55 – 57
	30,		22.2 – 22.6	55 – 59
	31,		22.2 – 22.6	53 – 56
August	1,		22.3 – 22.6	54 – 55
	2,		22.2 – 22.5	57
	3,		22.2 – 22.5	56 – 57
	4,		22.2 – 22.4	57
	5,		22.1 – 22.4	56 – 58
	6,		22.1 – 22.3	56 – 58
	7,		22.1 – 22.3	57 – 58
	8,		22.1 – 22.4	57 – 58
	9,		22.0 – 22.4	55 – 58
	10,		22.0 – 22.2	57
	11,		22.0 – 22.5	57 – 58
	12,		22.2 – 22.5	56 – 58
	13,		22.2 – 22.3	56
	14,		22.1 – 22.2	57 – 58
	15,		22.1	58
	16,		22.0 – 22.3	57 – 59
	17,		22.0 – 22.5	57 – 61
	18,		22.1 – 22.8	58 – 61
	19,		22.5 – 22.8	56 – 57
	20,		22.4 – 22.6	55 – 57
	21,		22.4 – 22.9	55 – 56

Appendix 5-3 Environmental condition of animal room

Establishment : Temperature, 22±3℃ ; Relative humidity, 55±10%

Date		Comment	Animal room No. 1 Range of temperature(℃)	Range of humidity(%)
August	22, 1999		22.4 – 22.8	55 – 57
	23,		22.5 – 22.8	54 – 57
	24,		22.5 – 22.7	56 – 57
	25,		22.4 – 22.5	56 – 57
	26,		22.3 – 22.6	55
	27,		22.2 – 22.6	55 – 57
	28,		22.4 – 22.6	56 – 57
	29,		22.4 – 22.8	57 – 58
	30,		22.4 – 22.6	54 – 58
	31,		22.4 – 22.8	56 – 57
Semtember	1,		22.5 – 22.8	56 – 58
	2,		22.5 – 22.6	54 – 57
	3,		22.3 – 22.5	55 – 56
	4,		22.4	57
	5,		22.3 – 22.7	56 – 58
	6,		22.2 – 22.5	54 – 58
	7,		22.2 – 22.5	56 – 57
	8,		22.2 – 22.8	58
	9,		22.4 – 22.7	54 – 58
	10,		22.4 – 22.6	56 – 57
	11,		22.4 – 22.7	56 – 57
	12,		22.5 – 22.8	55 – 58
	13,		22.4 – 22.7	56 – 58
	14,		22.3 – 22.9	56 – 59
	15,		22.3 – 22.7	56 – 58
	16,		22.3 – 22.4	57 – 58
	17,	Terminal kill after recovery period	22.1 – 22.2	55 – 56

Appendix 6-1-1 Analysis of contaminants in animal feed

Authorized by the Ministry of Health & Welfare of Japan

TOKYO KENBIKYOIN FOUNDATION

CENTER FOR FOOD ENVIRONMENT HYGIENE

IMAS-HAKOZAKI BLDG., 44-1, Nihonbashi hakozaki-cho, Chuo-Ku, Tokyo 103, JAPAN
TEL:03(3663)9631 FAX:03(3663)9635

Date : April 28 , 1999

CERTIFICATE

Applicant : NIHON NOSAN KOGYO K. K
Samples : LABO MR-STOCK, Lot No. 990373
Date of Application : April 5, 1999
Date of Examination : April 5 ~ 28 , 1999
Examination No. : 3904801

As a result of tests carried out on the sample submitted under the above mentioned name on April 5, 1999. We herewith report as follows :

RESUTS

Aflatoxin B_1	not detected (detection limit 5 ppb)
Aflatoxin B_2	not detected (detection limit 5 ppb)
Aflatoxin G_1	not detected (detection limit 5 ppb)
Aflatoxin G_2	not detected (detection limit 5 ppb)
N-Nitrosodimethylamine	not detected (detection limit 10 ppb)
N-Nitrosodiethylamine	not detected (detection limit 10 ppb)
Arsenic (As)	0.03 ppm
Lead (Pb)	0.2 ppm
Cadmium (Cd)	0.06 ppm
Mercury (Hg)	not detected (detection limit 0.01 ppm)
Chromium (Cr)	1.1 ppm
Polychlorinated biphenyl (PCBs)	not detected (detection limit 0.01 ppm)
Total DDT*1	not detected (detection limit 0.05 ppm)
Total BHC*2	not detected (detection limit 0.05 ppm)

*1 Expressed as total amounts of op'-DDT , pp'-DDT ,op'-DDD , pp-DDD , op'-DDE and pp'-DDE

*2 Expressed as total amounts of α -BHC, β -BHC, γ -BHC and δ -BHC

Appendix 6-1-2 Analysis of contaminants in animal feed

Authorized by the Ministry of Health & Welfare of Japan

TOKYO KENBIKYOIN FOUNDATION

CENTER FOR FOOD ENVIRONMENT HYGIENE

IMAS-HAKOZAKI BLDG., 44-1, Nihonbashi hakozaki-cho, Chuo-Ku, Tokyo 103, JAPAN

TEL:03(3663)9631 FAX:03(3663)9685

Heptachlor	not detected	(detection limit 0.01 ppm)
Dieldrin	not detected	(detection limit 0.01 ppm)
Aldrin	not detected	(detection limit 0.01 ppm)
Parathion	not detected	(detection limit 0.05 ppm)
Malathion	0.11 ppm	

[redacted], D.V.M.,Ph.D.

Director

Center for Food Environment Hygiene

TOKYO KENBIKYOIN FOUNDATION

DATE APR 21. 1999

MICROBIOROGICAL INSPECTION

Customer
RESEARCH INSTITUTE FOR ANIMAL SCIENCE
IN BIOCHEMISTORY AND TOXICOLOGY
Sample Designation
LABO MR STOCK
Lot No. 990373

S.P.C.……1.3×10^4 CFU/g
Coliform Group……Negative
Salmonella ……Negative
Moids……< 20 CFU/g

NIHON NOSAN KOGYO K.K.
R & D Center
Safety & QC Station
5246, TAKURA, TSUKUBASHI, 300-2615 JAPAN

[redacted] Director

[redacted]

Authorized by the Ministry of Health & Welfare of Japan

TOKYO KENBIKYOIN FOUNDATION

CENTER FOR FOOD ENVIRONMENT HYGIENE

IMAS-HAKOZAKI BLDG., 44-1, Nihonbashi hakozaki-cho, Chuo-Ku, Tokyo 103, JAPAN
TEL:03(3663)9681 FAX:03(3663)9683

Date : July 23 , 1999

CERTIFICATE

Applicant	:	NIHON NOSAN KOGYO K. K
Samples	:	LABO MR-STOCK, Lot No.990653
Date of Application	:	July 2, 1999
Date of Examination	:	July 2 ～ July 23 , 1999
Examination No.	:	3907803

As a result of tests carried out on the sample submitted under the above mentioned name on July 2, 1999. We herewith report as follows :

RESUTS

Aflatoxin B_1	not detected	(detection limit 5 ppb)
Aflatoxin B_2	not detected	(detection limit 5 ppb)
Aflatoxin G_1	not detected	(detection limit 5 ppb)
Aflatoxin G_2	not detected	(detection limit 5 ppb)
N-Nitrosodimethylamine	not detected	(detection limit 10 ppb)
N-Nitrosodiethylamine	not detected	(detection limit 10 ppb)
Arsenic (As)	0.29 ppm	
Lead (Pb)	0.2 ppm	
Cadmium (Cd)	0.08 ppm	
Mercury (Hg)	not detected	(detection limit 0.01 ppm)
Chromium (Cr)	1.7 ppm	
Polychlorinated biphenyl (PCBs)	not detected	(detection limit 0.01 ppm)
Total DDT*[1]	not detected	(detection limit 0.05 ppm)
Total BHC*[2]	not detected	(detection limit 0.05 ppm)

*[1] Expressed as total amounts of op'-DDT , pp'-DDT ,op'-DDD , pp-DDD , op'-DDE and pp'-DDE

*[2] Expressed as total amounts of α-BHC, β-BHC, γ-BHC and δ-BHC

Appendix 6-2-2 Analysis of contaminants in animal feed

Authorized by the Ministry of Health & Welfare of Japan

TOKYO KENBIKYOIN FOUNDATION

CENTER FOR FOOD ENVIRONMENT HYGIENE

IMAS-HAKOZAKI BLDG., 44-1, Nihonbashi hakozaki-cho, Chuo-Ku, Tokyo 103, JAPAN

TEL:03(3663)9581 FAX:03(3663)9635

Heptachlor	not detected	(detection limit 0.01 ppm)
Dieldrin	not detected	(detection limit 0.01 ppm)
Aldrin	not detected	(detection limit 0.01 ppm)
Parathion	not detected	(detection limit 0.05 ppm)
Malathion	0.10 ppm	

[redacted]

[redacted], D.V.M., Ph.D.

Director

Center for Food Environment Hygiene

TOKYO KENBIKYOIN FOUNDATION

DATE JULY 16. 1999

MICROBIOROGICAL INSPECTION

Customer
RESEARCH INSTITUTE FOR ANIMAL SCIENCE
IN BIOCHEMISTORY AND TOXICOLOGY
Sample Designation
LABO MR STOCK
Lot No. 990653

S.P.C.……1.0×10^4 CFU/g
Coliform Group……Negative
Salmonella ……Negative
Moids……< 20 CFU/g

NIHON NOSAN KOGYO K.K.
R & D Center
Safety & QC Station
5246, TAKURA, TSUKUBASHI, 300-2615 JAPAN

[redacted] Director

[redacted]

Authorized by the Ministry of Health & Welfare of Japan

TOKYO KENBIKYOIN FOUNDATION

CENTER FOR FOOD ENVIRONMENT HYGIENE

IMAS-HAKOZAKI BLDG., 44-1, Nihonbashi hakozaki-cho, Chuo-Ku, Tokyo 103, JAPAN
TEL:03(3663)9631 FAX:03(3663)9635

Date : Aug. 12 , 1999

CERTIFICATE

Applicant	:	NIHON NOSAN KOGYO K. K
Samples	:	LABO MR-STOCK, Lot No.990755
Date of Application	:	July 26, 1999
Date of Examination	:	July 26 ~ Aug. 12 , 1999
Examination No.	:	3907807

As a result of tests carried out on the sample submitted under the above mentioned name on July 26, 1999. We herewith report as follows :

RESUTS

Aflatoxin B_1	not detected (detection limit 5 ppb)
Aflatoxin B_2	not detected (detection limit 5 ppb)
Aflatoxin G_1	not detected (detection limit 5 ppb)
Aflatoxin G_2	not detected (detection limit 5 ppb)
N-Nitrosodimethylamine	not detected (detection limit 10 ppb)
N-Nitrosodiethylamine	not detected (detection limit 10 ppb)
Arsenic (As)	0.17 ppm
Lead (Pb)	0.4 ppm
Cadmium (Cd)	0.10 ppm
Mercury (Hg)	not detected (detection limit 0.01 ppm)
Chromium (Cr)	1.8 ppm
Polychlorinated biphenyl (PCBs)	not detected (detection limit 0.01 ppm)
Total DDT*[1]	not detected (detection limit 0.05 ppm)
Total BHC*[2]	not detected (detection limit 0.05 ppm)

*[1] Expressed as total amounts of op'-DDT , pp'-DDT ,op'-DDD , pp-DDD , op'-DDE and pp'-DDE

*[2] Expressed as total amounts of α-BHC, β-BHC, γ-BHC and δ-BHC

Appendix 6-3-2 Analysis of contaminants in animal feed

Authorized by the Ministry of Health & Welfare of Japan

TOKYO KENBIKYOIN FOUNDATION

CENTER FOR FOOD ENVIRONMENT HYGIENE

IMAS-HAKOZAKI BLDG., 44-1, Nihonbashi hakozaki-cho, Chuo-Ku, Tokyo 103, JAPAN

TEL:03(3663)9681 FAX:03(3663)9633

Heptachlor ·····	not detected	(detection limit 0.01 ppm)
Dieldrin ·····	not detected	(detection limit 0.01 ppm)
Aldrin ·····	not detected	(detection limit 0.01 ppm)
Parathion ·····	not detected	(detection limit 0.05 ppm)
Malathion ·····	0.05 ppm	

[redacted]

[redacted] D.V.M., Ph.D.

Director

Center for Food Environment Hygiene

TOKYO KENBIKYOIN FOUNDATION

DATE AUG 2. 1999

MICROBIOROGICAL INSPECTION

Customer
RESEARCH INSTITUTE FOR ANIMAL SCIENCE
IN BIOCHEMISTORY AND TOXICOLOGY
Sample Designation
LABO MR STOCK
Lot No. 990755

S.P.C. ..... 1.7×10^4 CFU/g
Coliform Group ..... Negative
Salmonella ..... Negative
Moids ..... < 20 CFU/g

NIHON NOSAN KOGYO K.K.
R & D Center
Safety & QC Station
5246, TAKURA, TSUKUBASHI, 300-2615 JAPAN

[redacted] Director

[redacted]

Appendix 7-1 Analysis of contaminants in drinking water

Quality Analysis & Certificate for Drinking Water

Certificate No: D-990079

Date : 1999. FEB. 5th

Messrs. Research Institute for Animal in Biochemistry and Toxicology

Place of take up sample:

Drinking Water for animal of a BS area

Date of take up sample : '99 JAN.28th

Examination purpose :

Propriety of a water quality standard in water supply law

Tokyo Technic[redacted]o., Ltd.

6chome-7-6 Nakaka[redacted] Tokyo

TEL 03(3688[redacted]

(Tokyo Metropolice Registered N56#327)

Responsible person : [redacted]

Items	Results	Regulative Standard
Bacteria	0 group/ml	Bellow 100groups/ml
Escherchia	Negative	Negative
Nitrogen (as nitric & nitrous acid)	1.7	Below 10 mg/l
Chloride	8.0	Below 200 mg/l
Organic (chemical oxygen demand)	0.7	Below 10 mg/l
pH	7.7	5.8 ~ 8.6
Taste	Normal	Normal
Odor	Normal	Normal
Color Standard Solution	Below 1 °	Below 5'
Turbidity Standard Solution	Below 1 °	Below 2'

Method of Analysis are based on The Ministry of Health and Welfare Order No. 69

Appendix 7-2 Analysis of contaminants in drinking water

Quality Analysis & Certificate for Drinking Water

Certificate No: D－990779

Date : 1999. Aug. 4th

Messrs. Research Institute for Animal in Biochemistry and Toxicology

Place of take up sample: Clean room

Date of take up sample : '99 July 9th

Examination purpose :
Propriety of a water quality standard in water supply law

Tokyo Tech[redacted] Co., Ltd.

6chome-7-6 Nak[redacted]ku Tokyo
TEL 03(368[redacted]

(Tokyo Metropolice Registered №56W327)

Responsible person : [redacted]

Items	Results	Regulative Standard
Bacteria	0 group/ml	Bellow 100groups/ml
Escherchia	Negative	Negative
Nitrogen (as nitric & nitrous acid)	1.6	Below 10 mg/l
Chloride	6.8	Below 200 mg/l
Organic (chemical oxygen demand)	1.5	Below 10 mg/l
pH	7.5	5.8 ~ 8.6
Taste	Normal	Normal
Odor	Normal	Normal
Color Standard Solution	Below 1 °	Below 5'
Turbidity Standard Solution	Below 1 °	Below 2'
Lead	0.005 Under	0.05 Below
Zinc	0.1 Under	1.0 Below
Iron	0.03 Under	0.3 Below
Copper	0.1 Under	1.0 Below
Evaporated Residue	52	500 Below
Chloroform	0.0080	0.06 Below
Bromo-dichloromethane	0.0020	0.03 Below
Chloro-dibromomethane	0.001 Under	0.1 Below
Bromoform	0.0009 Under	0.09 Below
Total Trihalomethane	0.011	0.1 Below

Method of Analysis are based on The Ministry of Health and Welfare Order No. 69

Japan Food Research Laboratories

分析試験成績書

第199060425-001号
平成11年06月17日

依頼者　日本チャールス・リバー株式会社

検体名　ホワイトフレーク

付記事項　＊＊＊＊＊

財団法人
日本食品[redacted]

東京本部 〒15[redacted]元代々木町52番1号
大阪支所 〒564[redacted]豊津町3番1号
名古屋支所 〒460[redacted]大須4丁目5番13号
九州支所 〒81[redacted]下呉服町1番12号
多摩研究所 〒206[redacted]永山6丁目11番10号

平成11年06月03日当センターに提出された上記検体について分析試験した結果は次のとおりです。

分析試験結果

分析試験項目	結果	検出限界	注	分析方法
乾燥減量	7.1%		1	常圧加熱乾燥法
ヒ素(Asとして)	検出せず	0.1ppm		DDTC-Ag吸光光度法
鉛	0.23ppm			原子吸光光度法
カドミウム	0.11ppm			原子吸光光度法
総水銀	検出せず	0.01ppm		還元気化原子吸光光度法
BHC	検出せず	0.02ppm		ガスクロマトグラフ法
DDT	検出せず	0.02ppm		ガスクロマトグラフ法
アルドリン	検出せず	0.01ppm		ガスクロマトグラフ法
ディルドリン	検出せず	0.01ppm		ガスクロマトグラフ法
エンドリン	検出せず	0.01ppm		ガスクロマトグラフ法
ヘプタクロル	検出せず	0.01ppm		ガスクロマトグラフ法
ダイアジノン	検出せず	0.05ppm		ガスクロマトグラフ法
パラチオン	検出せず	0.05ppm		ガスクロマトグラフ法
パラチオンメチル	検出せず	0.05ppm		ガスクロマトグラフ法
マラチオン(マラソン)	検出せず	0.05ppm		ガスクロマトグラフ法
PCB	検出せず	0.1ppm		ガスクロマトグラフ法
アフラトキシンB_1	検出せず	5ppb		高速液体クロマトグラフ法
アフラトキシンB_2	検出せず	5ppb		高速液体クロマトグラフ法
アフラトキシンG_1	検出せず	5ppb		高速液体クロマトグラフ法
アフラトキシンG_2	検出せず	5ppb		高速液体クロマトグラフ法
一般細菌数(生菌数)	4.8×10^4／g			標準寒天平板培養法
大腸菌群	陰性／2.22g			BGLB法
サルモネラ	陰性／25g			増菌培養法
カビ数	60／g			ポテトデキストロース(10%)寒天平板培養法

注1. 測定条件：温度, 105℃；時間, 5時間

Appendix 9-1 Individual clinical signs of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
0	001	KT	22	NAD
	002	KT	22	NAD
	003	KT	22	NAD
	004	KT	22	NAD
	005	KT	22	NAD
	006	KT	22	NAD
	007	KR	85	NAD
	008	KR	85	NAD
	009	KR	85	NAD
	010	KR	85	NAD
	011	KR	85	NAD
	012	KR	85	NAD
20	013	KT	22	NAD
	014	KT	22	NAD
	015	KT	22	NAD
	016	KT	22	NAD
	017	KT	22	NAD
	018	KT	22	NAD
	019	KR	85	NAD
	020	KR	85	NAD
	021	KR	85	NAD
	022	KR	85	NAD
	023	KR	85	NAD
	024	KR	85	NAD

KT : Killed by design after administration period of 18-day KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected

Appendix 9-2 Individual clinical signs of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
60	025	KT	22	NAD
	026	KT	22	NAD
	027	KT	22	NAD
	028	KT	22	Decrease in locomotor activity, + (4)[a]
	029	KT	22	NAD
	030	KT	22	NAD
	031	KR	85	NAD
	032	KR	85	NAD
	033	KR	85	NAD
	034	KR	85	NAD
	035	KR	85	NAD
	036	KR	85	NAD
200	037	KT	22	Decrease in locomotor activity, + (5-15) / ++ (7)[a]
				Deep respiration, + (4, 5)[a]
				Muscle weakness, + (6-14) / ++ (4, 5)[a]
	038	KT	22	Decrease in locomotor activity, + (5, 6, 8-15, 17) / ++ (4, 7, 16)[a]
				Deep respiration, + (4, 5, 7)[a]
				Muscle weakness, + (5, 6, 8-15) / ++ (4, 7, 16)[a]
				Tremor, - (13-15)[a]
				Emaciation, + (20, 21)[a]
				Pale skin, + (4)[a]
	039	KT	22	Decrease in locomotor activity, + (5, 7-17) / ++ (4, 6)[a]
				Deep respiration, + (5, 6)[a]
				Muscle weakness, + (5, 7-11, 13, 14, 16) / ++ (4, 7)[a]

KT : Killed by design after administration period of 18-day KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected ; + : Slight ; ++ : Moderate
a : Days of age when the sign was observed

Appendix 9-3 Individual clinical signs of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
200	040	KT	22	Decrease in locomotor activity, + (5, 9-12, 14, 16) / ++ (4, 6-8, 13)[a] Deep respiration, + (4-8)[a] Muscle weakness, + (5, 9-12, 16) / ++ (6-8, 13)[a]
	041	KT	22	Decrease in locomotor activity, + (5, 6-15, 21) / ++ (4, 9, 17)[a] Deep respiration, + (4-7)[a] Muscle weakness, + (5, 8-15, 21) / ++ (4, 9, 17)[a] Pale skin, + (4)[a]
	042	KT	22	Decrease in locomotor activity, + (5-14, 16, 17) / ++ (4)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (4-11, 13, 21)[a] Staggering gait, + (21)[a]
	043	KR	85	Decrease in locomotor activity, + (5-14, 16, 17, 19-21) / ++ (4)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (5-11, 13, 16, 19, 21) / ++ (4)[a]
	044	KR	85	Decrease in locomotor activity, + (5-15, 17, 19) / ++ (4)[a] Deep respiration, + (4, 5, 7)[a] Muscle weakness, + (5, 6, 8-11, 13) / ++ (4, 7)[a] Pale skin, ++ (4)[a]
	045	KR	85	Decrease in locomotor activity, + (5-16, 20) / ++ (4, 19)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (5, 6, 8-11, 13, 15, 16, 20) / ++ (4, 7, 19)[a] Staggering gait, + (20)[a] Emaciation, + (21)[a] Pale skin, ++ (4)[a]
	046	KR	85	Decrease in locomotor activity, + (5-9, 11-14, 16, 17, 21) / ++ (4, 10)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (5-9, 11, 13, 16) / ++ (4, 7)[a] Tremor, + (13, 15)[a] Staggering gait, + (19)[a]

KT : Killed by design after administration period of 18-day KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected ; + : Slight ; ++ : Moderate
a : Days of age when the sign was observed

Appendix 9-4 Individual clinical signs of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
200	047	KR	85	Decrease in locomotor activity, + (5, 6, 9, 11-17, 19) / ++ (4, 7, 8, 10)[a] Deep respiration, + (4, 5, 8)[a] Muscle weaKNESS, + (5-7, 9, 11, 13) / ++ (4, 8, 10)[a]
	048	KR	85	Decrease in locomotor activity, + (5-7, 11-15, 17, 19, 20) / ++ (4, 8-10)[a] Deep respiration, + (4, 5, 8-10, 19)[a] Muscle weakness, + (5, 6, 11, 13, 19) / ++ (4, 7-10)[a] Staggering gait, + (21)[a]

KT : Killed by design after administration period of 18-day KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected ; + : Slight ; ++ : Moderate
a : Days of age when the sign was observed

Appendix 10-1 Individual clinical signs of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
0	501	KT	22	NAD
	502	KT	22	NAD
	503	KT	22	NAD
	504	KT	22	NAD
	505	KT	22	NAD
	506	KT	22	NAD
	507	KR	85	NAD
	508	KR	85	NAD
	509	KR	85	NAD
	510	KR	85	NAD
	511	KR	85	NAD
	512	KR	85	NAD
20	513	KT	22	NAD
	514	KT	22	NAD
	515	KT	22	NAD
	516	KT	22	NAD
	517	KT	22	NAD
	518	KT	22	NAD
	519	KR	85	NAD
	520	KR	85	NAD
	521	KR	85	NAD
	522	KR	85	NAD
	523	KR	85	NAD
	524	KR	85	NAD

KT : Killed by design after administration period of 18-days KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected

Appendix 10-2 Individual clinical signs of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
60	525	KT	22	NAD
	526	KT	22	NAD
	527	KT	22	NAD
	528	KT	22	NAD
	529	KT	22	NAD
	530	KT	22	NAD
	531	KR	85	NAD
	532	KR	85	NAD
	533	KR	85	NAD
	534	KR	85	NAD
	535	KR	85	NAD
	536	KR	85	NAD
200	537	KT	22	Decrease in locomotor activity, + (5-15) / ++ (4)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (6-11, 13) / ++ (4, 5)[a] Tremor, + (13, 14)[a] Staggering gait, + (21)/++(10)[a]
	538	KT	22	Decrease in locomotor activity, + (5-15, 17) / ++ (4, 17)[a] Deep respiration, + (4, 5, 7)[a] Staggering gait, ++(10)[a] Muscle weakness, + (5-11, 13, 14) / ++ (4, 17)[a]
	539	KT	22	Decrease in locomotor activity, + (5-18) / ++ (4)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (5-11, 13, 14, 17) / ++ (4)[a]

KT : Killed by design after administration period of 18-days KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected ; + : Slight ; ++ : Moderate
a : Days of age when the sign was observed

Appendix 10-3 Individual clinical signs of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
200	540	KT	22	Decrease in locomotor activity, + (5-9, 11-14, 17) / ++ (4, 10)[a] Deep respiration, + (4, 7)[a] Muscle weakness, + (4-9, 11, 13, 16) / ++ (7, 10)[a] Staggering gait, + (21)[a]
	541	KT	22	Decrease in locomotor activity, + (5-9, 11-17, 20, 21) / ++ (4, 10)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (4-7, 8, 9, 11, 13, 15, 16) / ++ (7, 10)[a] Tremor, + (13, 15)[a] Staggering gait, + (10, 18-20)[a] Emaciation, + (21)[a]
	542	KT	22	Decrease in locomotor activity, + (5-17, 19 21) / ++ (4)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (5, 6, 8-11, 13, 20) / ++ (4, 7)[a] Staggering gait, + (21)[a]
	543	KR	85	Decrease in locomotor activity, + (5-14, 16, 17, 21) / ++ (4)[a] Deep respiration, + (4, 5)[a] Muscle weakness, + (5-13, 16, 21) / ++ (4)[a]
	544	KR	85	Decrease in locomotor activity, + (5-7, 9-15, 17) / ++ (4, 8, 16)[a] Deep respiration, + (4, 5, 8)[a] Muscle weakness, + (5-13, 16, 21) / ++ (6, 8, 16)[a] Tremor, + (14)[a] Pale skin, + (4)[a]
	545	KR	85	Decrease in locomotor activity, + (5-11, 13-17, 19, 21) / ++ (4, 12)[a] Deep respiration, + (4, 5, 12)a Muscle weakness, + (5-11, 13-16, 21) / ++ (4, 12)[a] Staggering gait, + (19)[a] Emaciation, + (21)[a]

KT : Killed by design after administration period of 18-days KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected ; + : Slight ; ++ : Moderate
a : Days of age when the sign was observed

Appendix 10-4 Individual clinical signs of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Fate	Age of death (days)	Clinical signs
200	546	KR	85	Decrease in locomotor activity, + (5-17, 21) / ++ (4)[a] Deep respiration, + (4, 5, 12)[a] Muscle weakness, + (5, 6, 8-13, 15, 16) / ++ (4, 7)[a] Tremor, + (15)[a]
	547	KR	85	Decrease in locomotor activity, + (5, 7-17, 19, 20) / ++ (4, 7)[a] Deep respiration, + (4-7)[a] Muscle weakness, + (5, 8-11, 13, 15, 16) / ++ (4, 6, 7)[a]
	548	KR	85	Decrease in locomotor activity, + (5-9, 11-14, 17, 19, 20) / ++ (4, 10, 16)[a] Deep respiration, + (4, 5, 10, 16, 19)[a] Muscle weakness, + (5, 6, 8, 9, 11, 13, 14, 19) / ++ (4, 7, 10, 16)[a] Staggering gait, + (21)[a]

KT : Killed by design after administration period of 18 days KR : Killed by design after post-administration period of 63-days
NAD : No abnormalities detected ; + : Slight ; ++ : Moderate
a : Days of age when the sign was observed

Appendix 11-1 Individual data on sensory functions of male treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg)	Animal number	State of gait	Pupil reflex	Pinna reflex	Corneal reflex	Visiual stepping reflex	Righting reflex	Air righting reflex	Ispilateral flexor reflex
	Score range	1~8	1, 2	1~4	1~4	1~4	1~4	1~3	1~3
0	001	2	1	1	1	1	1	1	1
	002	2	1	1	1	1	1	1	1
	003	2	1	1	1	1	1	1	1
	004	2	1	1	1	1	1	1	1
	005	2	1	1	1	1	1	1	1
	006	2	1	1	1	1	1	1	1
	007	2	1	1	1	1	1	1	1
	008	2	1	1	1	1	1	1	1
	009	2	1	1	1	1	1	1	1
	010	2	1	1	1	1	1	1	1
	011	2	1	1	1	1	1	1	1
	012	2	1	1	1	1	1	1	1
20	013	2	1	1	1	1	1	1	1
	014	2	1	1	1	1	1	1	1
	015	2	1	1	1	1	1	1	1
	016	2	1	1	1	1	1	1	1
	017	2	1	1	1	1	1	1	1
	018	2	1	1	1	1	1	1	1
	019	2	1	1	1	1	1	1	1
	020	2	1	1	1	1	1	1	1
	021	2	1	1	1	1	1	1	1
	022	2	1	1	1	1	1	1	1
	023	2	1	1	1	1	1	1	1
	024	2	1	1	1	1	1	1	1

Appendix 11-2 Individual data on sensory functions of male treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg)	Animal number	State of gait	Pupil reflex	Pinna reflex	Corneal reflex	Visiual stepping reflex	Righting reflex	Air righting reflex	Ispilateral flexor reflex
	Score range	1~8	1, 2	1~4	1~4	1~4	1~4	1~3	1~3
60	025	2	1	1	1	1	1	1	1
	026	2	1	1	1	1	1	1	1
	027	2	1	1	1	1	1	1	1
	028	2	1	1	1	1	1	1	1
	029	2	1	1	1	1	1	1	1
	030	2	1	1	1	1	1	1	1
	031	2	1	1	1	1	1	1	1
	032	2	1	1	1	1	1	1	1
	033	2	1	1	1	1	1	1	1
	034	2	1	1	1	1	1	1	1
	035	2	1	1	1	1	1	1	1
	036	2	1	1	1	1	1	1	1
200	037	2	1	1	1	1	1	1	1
	038	2	1	1	1	1	1	1	1
	039	2	1	1	1	1	1	1	1
	040	2	1	1	1	1	1	1	1
	041	2	1	1	1	1	1	1	1
	042	2	1	1	1	1	1	1	1
	043	2	1	1	1	1	1	1	1
	044	2	1	1	1	1	1	1	1
	045	2	1	1	1	1	1	1	1
	046	2	1	1	1	1	1	1	1
	047	2	1	1	1	1	1	1	1
	048	2	1	1	1	1	1	1	1

Appendix 12-1 Individual data on sensory functions of female treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg)	Animal number	State of gait	Pupil reflex	Pinna reflex	Corneal reflex	Visiual stepping reflex	Righting reflex	Air righting reflex	Ispilateral flexor reflex
	Score range	1~8	1, 2	1~4	1~4	1~4	1~4	1~3	1~3
0	501	2	1	1	1	1	1	1	1
	502	2	1	1	1	1	1	1	1
	503	2	1	1	1	1	1	1	1
	504	2	1	1	1	1	1	1	1
	505	2	1	1	1	1	1	1	1
	506	2	1	1	1	1	1	1	1
	507	2	1	1	1	1	1	1	1
	508	2	1	1	1	1	1	1	1
	509	2	1	1	1	1	1	1	1
	510	2	1	1	1	1	1	1	1
	511	2	1	1	1	1	1	1	1
	512	2	1	1	1	1	1	1	1
20	513	2	1	1	1	1	1	1	1
	514	2	1	1	1	1	1	1	1
	515	2	1	1	1	1	1	1	1
	516	2	1	1	1	1	1	1	1
	517	2	1	1	1	1	1	1	1
	518	2	1	1	1	1	1	1	1
	519	2	1	1	1	1	1	1	1
	520	2	1	1	1	1	1	1	1
	521	2	1	1	1	1	1	1	1
	522	2	1	1	1	1	1	1	1
	523	2	1	1	1	1	1	1	1
	524	2	1	1	1	1	1	1	1

Appendix 12-2 Individual data on sensory functions of female treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg)	Animal number	State of gait	Pupil reflex	Pinna reflex	Corneal reflex	Visiual stepping reflex	Righting reflex	Air righting reflex	Ispilateral flexor reflex
	Score range	1~8	1, 2	1~4	1~4	1~4	1~4	1~3	1~3
60	525	1	1	1	1	1	1	1	1
	526	1	1	1	1	1	1	1	1
	527	1	1	1	1	1	1	1	1
	528	1	1	1	1	1	1	1	1
	529	1	1	1	1	1	1	1	1
	530	1	1	1	1	1	1	1	1
	531	1	1	1	1	1	1	1	1
	532	1	1	1	1	1	1	1	1
	533	1	1	1	1	1	1	1	1
	534	1	1	1	1	1	1	1	1
	535	1	1	1	1	1	1	1	1
	536	1	1	1	1	1	1	1	1
200	537	1	1	1	1	1	1	1	1
	538	1	1	1	1	1	1	1	1
	539	1	1	1	1	1	1	1	1
	540	1	1	1	1	1	1	1	1
	541	1	1	1	1	1	1	1	1
	542	1	1	1	1	1	1	1	1
	543	1	1	1	1	1	1	1	1
	544	1	1	1	1	1	1	1	1
	545	1	1	1	1	1	1	1	1
	546	1	1	1	1	1	1	1	1
	547	1	1	1	1	1	1	1	1
	548	1	1	1	1	1	1	1	1

Appendix 13-1 Individual external differentiation of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Appearance of hair	Eruption of lower incisor	Separation of eyelids	Descent of testes
0	001	7	10	15	
	002	7	10	14	
	003	7	10	15	
	004	7	11	14	
	005	7	9	14	
	006	7	10	14	
	007	7	10	14	18
	008	7	10	13	19
	009	7	9	14	18
	010	7	10	14	17
	011	7	10	14	16
	012	7	10	14	16
	Mean	7.0	9.9	14.1	17.3
20	013	7	10	13	
	014	7	10	14	
	015	7	10	14	
	016	7	10	14	
	017	7	10	13	
	018	7	10	13	
	019	7	10	14	18
	020	7	10	14	17
	021	7	10	13	17
	022	7	10	14	18
	023	7	10	14	19
	024	7	10	14	16
	Mean	7.0	10.0	13.7	17.5

Each value is expressed as days of age.

Appendix 13-2 Individual external differentiation of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Appearance of hair	Eruption of lower incisor	Separation of eyelids	Descent of testes
60	025	7	10	13	
	026	7	11	13	
	027	7	10	13	
	028	7	10	14	
	029	7	10	14	
	030	7	10	14	
	031	7	10	13	17
	032	7	10	14	16
	033	7	9	14	18
	034	7	10	13	16
	035	7	10	13	18
	036	7	10	14	16
	Mean	7.0	10.0	13.5	16.8
200	037	7	9	14	
	038	7	10	14	
	039	7	10	14	
	040	7	10	14	
	041	7	10	14	
	042	7	10	14	
	043	7	10	14	18
	044	7	10	14	18
	045	7	11	14	16
	046	7	9	13	18
	047	7	10	14	16
	048	7	9	13	16
	Mean	7.0	9.8	13.8	17.0

Each value is expressed as days of age.

Appendix 14-1 Individual external differentiation of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Appearance of hair	Eruption of lower incisor	Separation of eyelids	Opening of vagina
0	501	7	10	14	
	502	7	11	14	
	503	7	10	14	
	504	7	10	14	
	505	7	9	14	
	506	7	9	13	
	507	7	10	13	30
	508	7	10	14	33
	509	7	10	14	31
	510	7	10	14	32
	511	7	10	14	32
	512	7	10	14	31
	Mean	7.0	9.9	13.8	31.5
20	513	7	11	13	
	514	7	10	13	
	515	7	10	13	
	516	7	10	14	
	517	7	10	14	
	518	7	10	13	
	519	7	10	14	32
	520	7	10	14	34
	521	7	10	13	32
	522	7	10	14	35
	523	7	10	13	33
	524	7	10	13	33
	Mean	7.0	10.1	13.4	33.2

Each value is expressed as days of age.

Appendix 14-2 Individual external differentiation of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

Dose (mg/kg/day)	Animal number	Appearance of hair	Eruption of lower incisor	Separation of eyelids	Opening of vagina
	525	7	10	14	
	526	7	10	13	
	527	7	10	13	
	528	7	9	13	
	529	7	9	14	
	530	7	10	13	
60	531	7	10	14	34
	532	7	10	14	32
	533	7	9	14	34
	534	7	10	14	32
	535	7	10	14	33
	536	7	10	14	33
	Mean	7.0	9.8	13.7	33.0
	537	7	10	13	
	538	7	10	13	
	539	7	11	14	
	540	7	10	13	
	541	7	9	14	
	542	7	10	14	
200	543	7	11	13	32
	544	7	10	14	33
	545	7	10	13	32
	546	7	10	13	34
	547	7	9	14	33
	548	7	10	14	33
	Mean	7.0	10.0	13.5	32.8

Each value is expressed as days of age.

Appendix 15-1 Individual body weights of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Dose (mg/kg/day)	Animal number	Days of age 3	4	7	10	13	16	19	21	Gain 4-21	21	28	35	42	49	56	63	70	77	84	Gain 21-84
0	001	9.6	11.3	17.7	25.6	34.4	42.5	49.4	56.9	45.6											
	002	9.8	12.1	19.9	27.8	35.5	42.2	51.7	61.2	49.1											
	003	10.4	12.7	20.4	29.5	41.0	49.2	60.1	70.2	57.5											
	004	10.1	11.8	17.8	26.2	32.6	39.9	47.4	54.7	42.9											
	005	10.0	11.8	19.3	26.4	34.2	41.3	49.9	59.4	47.6											
	006	9.8	11.9	20.1	27.2	35.6	43.9	54.1	64.3	52.4											
	007	9.9	12.2	19.0	28.1	36.2	44.8	52.4	61.2	49.0	61	95	155	216	258	308	348	388	419	439	378
	008	9.8	11.7	17.9	24.1	31.4	38.5	45.2	53.4	41.7	53	92	149	209	263	326	370	418	458	496	443
	009	10.6	12.8	19.3	26.0	33.0	40.1	48.1	56.5	43.7	57	96	155	210	259	311	348	386	420	450	393
	010	9.4	11.3	18.5	26.8	36.1	46.1	55.2	62.9	51.6	63	98	145	197	245	298	332	371	398	424	361
	011	10.3	11.8	18.2	25.2	31.6	39.3	47.7	57.5	45.7	58	97	150	210	260	310	356	401	434	460	402
	012	10.0	11.9	17.7	25.5	32.4	40.6	48.1	57.0	45.1	57	98	156	213	264	327	371	415	449	477	420
	Mean	10.0	11.9	18.8	26.5	34.5	42.4	50.8	59.6	47.7	58	96	152	209	258	313	354	397	430	458	400
20	013	9.8	12.4	20.3	28.2	36.3	44.1	51.5	60.1	47.7											
	014	9.8	11.8	19.6	27.9	35.5	41.2	49.5	59.1	47.3											
	015	9.6	11.7	18.8	27.3	37.1	46.3	56.9	67.7	56.0											
	016	10.1	11.9	18.7	27.1	34.4	42.6	51.9	62.0	50.1											
	017	10.4	13.0	21.1	27.8	35.0	40.6	48.2	57.5	44.5											
	018	10.3	12.5	20.5	27.5	37.9	44.1	54.4	65.2	52.7											
	019	9.7	12.2	19.8	28.4	36.1	43.1	51.8	61.7	49.5	62	108	175	243	311	384	439	479	527	557	495
	020	10.1	12.0	18.8	24.5	31.4	38.4	44.8	54.0	42.0	54	96	150	212	277	343	389	444	495	528	474
	021	9.9	12.2	18.7	26.5	33.4	40.0	49.1	56.1	43.9	56	98	158	216	281	336	393	437	470	504	448
	022	10.4	12.1	18.8	27.0	35.7	45.3	53.5	63.2	51.1	63	106	167	238	307	375	419	461	504	538	475
	023	10.2	11.8	18.4	25.2	33.4	42.4	49.0	58.8	47.0	59	99	150	211	267	327	379	421	461	489	430
	024	9.4	11.2	17.7	25.5	33.1	38.7	45.3	53.5	42.3	54	92	152	212	264	321	369	415	452	487	433
	Mean	10.0	12.1	19.3	26.9	34.9	42.2	50.5	59.9	47.8	58	100	159	222	285	348	398	443	485	517	459

Appendix 15-2 Individual body weights of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Dose (mg/kg/day)	Animal number	Days of age 3	4	7	10	13	16	19	21	Gain 4-21	21	28	35	42	49	56	63	70	77	84	Gain 21-84
60	025	10.4	13.1	20.7	28.5	37.5	45.7	54.3	62.5	49.4											
	026	9.8	12.4	19.7	28.4	35.3	41.2	48.8	56.4	44.0											
	027	9.5	11.8	18.8	27.3	36.4	44.1	53.7	61.7	49.9											
	028	9.8	11.5	17.6	25.4	32.6	40.0	50.9	59.1	47.6											
	029	10.0	12.3	20.4	28.3	36.0	43.1	50.9	59.3	47.0											
	030	10.1	12.3	19.4	27.2	36.5	44.4	53.9	63.8	51.5											
	031	9.7	11.9	19.0	27.0	35.5	44.0	50.4	58.7	46.8	59	98	150	200	258	321	365	413	452	491	432
	032	10.0	12.2	18.8	25.7	31.3	38.9	47.2	57.0	44.8	57	103	167	228	287	341	385	425	451	478	421
	033	10.4	12.7	19.7	26.3	33.1	38.7	46.3	54.5	41.8	55	97	150	208	266	317	356	404	440	471	416
	034	9.4	11.6	19.4	27.0	36.1	45.2	54.9	63.5	51.9	64	102	161	223	283	340	388	427	453	489	425
	035	9.9	11.5	18.3	26.2	35.4	40.8	49.3	57.8	46.3	58	99	158	226	289	356	410	454	505	538	480
	036	10.2	12.6	17.7	24.6	31.3	38.9	46.2	54.1	41.5	54	100	162	232	292	344	385	421	453	481	427
	Mean	9.9	12.2	19.1	26.8	34.8	42.1	50.6	59.0	46.9	58	100	158	220	279	337	382	424	459	491	434
200	037	10.1	11.9	17.7	24.0	31.5	38.1	45.0	54.0	42.1											
	038	10.5	12.2	16.9	22.5	26.5	31.2	38.6	47.9	35.7											
	039	9.6	12.1	18.3	25.4	35.7	44.1	54.3	64.4	52.3											
	040	9.9	11.5	16.3	23.3	28.9	35.5	45.1	54.1	42.6											
	041	9.7	11.9	15.3	20.5	28.7	34.7	42.8	51.3	39.4											
	042	10.2	12.2	17.7	24.9	32.2	40.1	49.0	57.7	45.5											
	043	9.6	12.2	16.4	22.7	28.8	34.9	42.1	50.2	38.0	50	94	150	206	263	322	372	420	455	480	430
	044	9.9	11.8	15.5	20.0	26.5	34.3	41.1	50.0	38.2	50	94	162	233	304	371	420	474	515	537	487
	045	10.2	12.5	17.0	22.0	27.3	32.1	38.0	45.4	32.9	45	83	142	209	268	324	362	395	424	454	409
	046	9.9	11.7	18.1	25.2	32.3	40.0	48.1	58.0	46.3	58	100	161	226	285	336	372	409	442	477	419
	047	9.6	11.5	16.3	22.8	29.3	38.5	45.1	51.2	39.7	51	87	142	203	257	321	373	402	438	470	419
	048	10.3	12.6	17.4	23.0	29.0	35.3	42.5	49.8	37.2	50	95	161	226	286	340	379	427	467	497	447
	Mean	10.0	12.0	16.9	23.0	29.7	36.6	44.3	52.8	40.8	51	92	153	217	277	336	380	421	457	486	435

Appendix 16-1 Individual body weights of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Dose (mg/kg/day)	Animal number	Days of age 3	4	7	10	13	16	19	21	Gain 4-21	21	28	35	42	49	56	63	70	77	84	Gain 21-84
0	501	9.6	12.4	19.6	27.6	36.6	43.7	51.8	60.2	47.8											
	502	9.9	11.2	18.0	25.4	31.4	37.9	45.9	54.9	43.7											
	503	9.2	11.9	19.2	28.1	37.0	44.9	53.8	62.1	50.2											
	504	9.4	11.4	17.6	25.6	32.5	40.1	48.9	55.7	44.3											
	505	9.0	11.1	16.6	23.9	31.9	38.0	45.2	54.0	42.9											
	506	9.8	12.4	19.7	27.0	34.9	42.0	50.1	58.4	46.0											
	507	9.3	11.5	18.6	27.1	34.5	42.0	50.5	59.4	47.9	59	95	130	161	176	195	201	218	232	250	191
	508	9.9	12.3	19.1	25.1	32.9	40.1	45.8	54.1	41.8	54	90	132	163	183	209	224	239	253	268	214
	509	9.2	11.2	17.9	25.6	34.2	41.7	48.2	55.9	44.7	56	93	130	156	179	197	212	230	239	254	198
	510	9.4	11.3	18.1	26.3	35.0	43.4	50.9	58.8	47.5	59	94	136	164	188	214	236	249	258	280	221
	511	9.6	11.5	17.7	24.9	33.3	40.4	49.0	56.7	45.2	57	88	131	170	194	217	239	257	266	273	216
	512	9.6	10.9	17.5	24.4	32.5	39.5	46.5	56.6	45.7	57	95	138	166	191	213	225	237	252	258	201
	Mean	9.5	11.6	18.3	25.9	33.9	41.1	48.9	57.2	45.6	57	93	133	163	185	208	223	238	250	264	207
20	513	9.1	11.1	18.2	26.7	34.6	41.7	50.9	59.9	48.8											
	514	9.3	11.5	19.1	26.8	32.5	38.9	47.7	56.0	44.5											
	515	9.5	11.9	19.6	28.0	35.7	43.7	53.3	62.4	50.5											
	516	9.7	11.9	18.7	26.6	34.5	42.5	51.2	59.2	47.3											
	517	9.9	12.5	16.8	23.1	30.4	37.1	43.4	52.3	39.8											
	518	9.2	11.2	18.1	25.8	34.8	42.0	51.1	59.8	48.6											
	519	9.9	11.8	19.4	27.8	35.2	42.5	51.4	59.5	47.7	60	97	136	168	188	218	232	252	263	271	211
	520	9.5	11.0	17.1	23.8	31.3	39.0	45.8	54.2	43.2	54	85	116	148	160	180	193	204	217	226	172
	521	9.1	11.3	17.5	24.9	32.3	38.7	47.4	55.6	44.3	56	95	140	174	196	226	245	260	271	285	229
	522	9.4	11.4	18.7	27.3	38.0	48.1	57.3	64.3	52.9	64	97	137	173	186	208	225	240	249	260	196
	523	9.7	11.5	18.5	26.5	34.1	42.2	48.8	57.6	46.1	58	93	136	168	192	215	231	238	254	260	202
	524	9.2	11.3	17.8	24.9	32.5	39.8	46.7	53.7	42.4	54	86	129	162	186	207	226	241	257	269	215
	Mean	9.5	11.5	18.3	26.0	33.8	41.4	49.6	57.9	46.3	58	92	132	166	185	209	225	239	252	262	204

Appendix 16-2 Individual body weights of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Dose (mg/kg/day)	Animal number	Days of age 3	4	7	10	13	16	19	21	Gain 4-21	21	28	35	42	49	56	63	70	77	84	Gain 21-84
60	525	9.2	11.2	17.7	26.4	35.1	42.1	50.1	56.9	45.7											
	526	9.6	11.8	18.8	26.3	33.4	37.9	46.8	56.0	44.2											
	527	9.6	12.0	18.5	27.5	38.4	45.5	55.5	62.9	50.9											
	528	9.3	11.4	18.0	26.2	33.8	41.5	50.5	59.0	47.6											
	529	10.0	12.4	19.2	26.0	33.6	39.3	47.8	55.3	42.9											
	530	9.4	11.9	19.5	27.4	36.2	43.5	52.4	59.6	47.7											
	531	9.9	12.1	18.5	26.8	34.2	42.1	49.7	58.9	46.8	59	91	129	164	193	216	225	252	268	283	224
	532	9.6	11.7	18.4	24.5	29.8	39.0	46.3	55.2	43.5	55	94	139	172	191	218	237	251	263	273	218
	533	9.8	12.2	18.8	26.0	33.0	39.2	46.8	55.4	43.2	55	93	136	168	186	217	235	254	269	284	229
	534	9.4	11.1	17.3	24.9	33.4	41.6	49.6	59.6	48.5	60	97	135	169	194	216	237	255	273	283	223
	535	9.2	11.2	17.0	24.0	31.8	38.4	46.2	53.7	42.5	54	89	134	162	175	197	212	227	237	242	188
	536	9.0	10.9	17.1	24.0	29.5	37.1	45.1	53.8	42.9	54	90	132	157	185	204	217	232	249	260	206
	Mean	9.5	11.7	18.2	25.8	33.5	40.6	48.9	57.2	45.5	56	92	134	165	187	211	227	245	260	271	215
200	537	9.3	11.9	16.6	22.1	27.6	32.5	38.3	45.3	33.4											
	538	9.4	11.6	17.0	22.9	29.2	34.6	43.1	51.0	39.4											
	539	10.1	12.7	17.8	22.9	29.3	36.4	45.7	53.2	40.5											
	540	9.6	11.4	16.5	22.4	28.5	35.3	42.7	51.0	39.6											
	541	9.0	10.8	15.9	21.4	27.7	34.4	40.7	47.4	36.6											
	542	9.2	11.7	16.9	22.3	28.3	35.4	43.7	52.6	40.9											
	543	9.7	11.7	16.5	23.6	30.1	36.5	42.5	49.0	37.3	49	76	117	154	186	204	225	239	252	265	216
	544	9.3	11.4	16.2	21.5	27.0	33.0	39.2	47.2	35.8	47	86	130	167	192	217	236	254	262	266	219
	545	9.5	11.8	13.9	19.7	25.3	30.8	37.9	44.0	32.2	44	75	115	148	172	205	224	240	252	266	222
	546	10.1	12.5	17.4	23.9	31.6	39.2	48.5	55.4	42.9	55	92	134	171	194	220	236	252	272	287	232
	547	9.4	11.1	15.3	21.1	28.6	35.3	42.3	49.8	38.7	50	83	127	153	184	209	232	245	258	256	206
	548	9.1	10.8	14.7	20.6	26.3	33.1	39.2	46.4	35.6	46	76	115	140	158	177	184	201	211	220	174
	Mean	9.5	11.6	16.2	22.0	28.3	34.7	42.0	49.4	37.7	49	81	123	156	181	205	223	239	251	260	212

Appendix 17 Individual food consumption of male rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Dose (mg/kg/day)	Animal number	Days of age 28	35	42	49	56	63	70	77	84
0	007	18	25	29	29	33	34	36	37	39
	008	16	24	29	32	37	35	38	34	42
	009	17	24	28	29	33	33	34	36	37
	010	16	21	24	28	31	32	34	33	34
	011	18	24	30	29	35	36	36	37	34
	012	17	23	27	28	32	32	36	34	35
	Mean	17	24	28	29	34	34	36	35	37
20	019	19	30	33	34	39	38	37	36	42
	020	17	26	32	37	39	37	42	44	45
	021	17	26	29	35	36	37	38	39	37
	022	18	25	33	36	39	37	38	39	45
	023	20	25	29	33	37	40	43	38	40
	024	17	25	31	30	35	35	37	36	38
	Mean	18	26	31	34	38	37	39	39	41
60	031	19	24	28	29	35	33	36	37	37
	032	20	27	32	34	36	35	40	36	34
	033	18	23	29	32	33	29	36	33	37
	034	17	25	27	33	37	35	34	34	36
	035	22	27	35	36	40	39	41	43	42
	036	19	27	34	34	36	37	37	37	39
	Mean	19	26	31	33	36	35	37	37	38
200	043	20	27	29	32	36	35	37	35	36
	044	19	27	34	39	40	39	42	42	41
	045	16	23	30	34	35	33	34	34	40
	046	19	28	33	35	33	33	33	37	40
	047	18	25	32	32	33	38	38	35	43
	048	19	27	33	35	37	39	42	40	42
	Mean	19	26	32	35	36	36	38	37	40

Appendix 18 Individual food consumption of female rats treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Dose (mg/kg/day)	Animal number	Days of age 28	35	42	49	56	63	70	77	84
0	507	17	20	21	21	20	17	21	21	23
	508	16	20	22	18	24	24	24	23	28
	509	18	22	23	23	23	20	26	23	24
	510	17	22	22	20	23	24	24	24	24
	511	17	21	24	26	22	27	27	26	22
	512	18	22	23	24	24	22	22	23	23
	Mean	17	21	23	22	23	22	24	23	24
20	519	17	21	21	21	24	20	23	24	25
	520	17	18	20	19	20	20	20	22	22
	521	17	22	25	21	25	27	27	24	26
	522	17	20	24	20	23	26	23	22	25
	523	19	24	22	25	26	25	22	25	23
	524	14	19	20	23	24	24	23	26	29
	Mean	17	21	22	22	24	24	23	24	25
60	531	15	19	21	23	24	18	23	25	27
	532	18	22	23	22	26	22	25	24	25
	533	18	23	25	22	27	26	28	26	27
	534	18	21	25	22	22	25	24	27	26
	535	16	22	23	23	25	26	26	24	21
	536	15	20	18	23	24	23	20	24	26
	Mean	17	21	23	23	25	23	24	25	25
200	543	15	20	23	24	23	26	21	23	26
	544	16	23	25	25	25	26	28	24	23
	545	17	19	22	23	26	27	27	25	27
	546	18	22	24	22	26	24	26	28	28
	547	16	22	22	23	24	28	29	24	20
	548	15	19	18	21	23	19	23	22	24
	Mean	16	21	22	23	25	25	26	24	25

Appendix 19 - 1 Individual urinary findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Color	Cloudy	Volume (mL/18hrs)	Specific gravity	pH	Protein	Glucose	Ketone body	Occult blood	Urobilinogen	Bilirubin
0	007	PY	−	18.0	1.028	8.5	+	−	−	−	0.1	−
	008	PY	−	23.0	1.038	8.5	+	−	−	−	0.1	−
	009	PY	+	13.0	1.054	8.0	+	−	−	−	0.1	−
	010	PY	+	21.5	1.046	8.5	+	−	−	−	0.1	−
	011	PY	−	9.0	1.056	8.0	+	−	±	−	0.1	−
	012	PY	−	11.5	1.058	8.0	+	−	−	−	0.1	−
20	019	PY	−	16.0	1.052	8.5	+	−	−	−	0.1	−
	020	PY	−	17.4	1.038	7.5	+	−	±	−	0.1	−
	021	PY	−	14.2	1.042	8.5	+	−	−	−	0.1	−
	022	PY	−	17.0	1.042	8.0	+	−	−	−	0.1	−
	023	PY	+	12.4	1.048	8.5	+	−	±	−	0.1	−
	024	PY	−	14.3	1.038	8.0	+	−	−	−	0.1	−

Color : PY(pale yellow)
Cloudy : −(negligible), +(cloudy)
Protein : +(30mg/dL)
Glucose : −(negligible)
Ketone body : −(negligible), ±(5mg/dL), +(15mg/dL)
Occult blood : −(negligible)
Urobilinogen : Ehrlich unit/dL
Bilirubin : −(negligible)

Appendix 19 - 2 Individual urinary findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Color	Cloudy	Volume (mL/18hrs)	Specific gravity	pH	Protein	Glucose	Ketone body	Occult blood	Urobilinogen	Bilirubin
60	031	PY	−	26.4	1.050	8.5	+	−	−	−	0.1	−
	032	PY	−	24.5	1.050	8.0	+	−	±	−	0.1	−
	033	PY	−	18.8	1.038	8.0	+	−	−	−	0.1	−
	034	PY	−	8.9	1.062	8.5	+	−	−	−	0.1	−
	035	PY	−	24.4	1.038	8.0	+	−	−	−	0.1	−
	036	PY	−	17.7	1.038	8.5	+	−	±	−	0.1	−
200	043	PY	−	12.5	1.052	7.5	+	−	−	−	0.1	−
	044	PY	−	15.6	1.034	8.5	+	−	−	−	0.1	−
	045	PY	−	7.5	1.066	7.0	+	−	±	−	0.1	−
	046	PY	−	18.2	1.052	8.5	+	−	−	−	0.1	−
	047	PY	−	24.3	1.054	8.5	+	−	−	−	0.1	−
	048	PY	−	18.9	1.032	8.5	+	−	−	−	0.1	−

Appendix 19 - 3 Individual urinary findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Erythro-cytes	Leuko-cytes	Crystals			Epithelial cells			Casts			Fat globules
				Mg	Ca	Ams	Sq	R	S	G	H	W	
0	007	−	−	−	−	−	+	−	−	−	−	−	−
	008	−	−	−	−	−	+	−	−	−	−	−	−
	009	−	−	+++	−	−	+	−	−	−	−	−	−
	010	−	−	++	−	−	+	−	−	−	−	−	−
	011	−	−	++	−	−	+	−	−	−	−	−	−
	012	−	−	++	−	−	+	−	−	−	−	−	−
20	019	−	−	++	−	−	+	−	−	−	−	−	−
	020	−	−	+	−	−	+	−	−	−	−	−	−
	021	−	−	+	−	−	+	−	−	−	−	−	−
	022	−	−	+	−	−	+	−	−	−	−	−	−
	023	−	−	−	−	−	+	−	−	−	−	−	−
	024	−	−	+	−	−	+	−	−	−	−	−	−

− : Not observed; + : A few in some fields; ++ : A few in all fields; +++ : Many in all fields

Crystals
- Mg(ammonium magnesium phosphate)
- Ca(calcium phosphate)
- Ams(amorphous)

Epithelial cells
- Sq(squamous)
- R(round)
- S(spindle)

Casts
- G(granule)
- H(hyaline)
- W(waxy)

Appendix 19 - 4 Individual urinary findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Erythro-cytes	Leuko-cytes	Crystals			Epithelial cells			Casts			Fat globules
				Mg	Ca	Ams	Sq	R	S	G	H	W	
60	031	−	−	++	−	−	+	−	−	−	−	−	−
	032	−	−	+++	−	−	+	−	−	−	−	−	−
	033	−	−	++	−	−	+	−	−	−	−	−	−
	034	−	−	++	−	−	+	−	−	−	−	−	−
	035	−	−	+	−	−	+	−	−	−	−	−	−
	036	−	−	+++	−	−	+	−	−	−	−	−	−
200	043	−	−	+	−	−	+	−	−	−	−	−	−
	044	−	−	+	−	−	+	−	−	−	−	−	−
	045	−	−	+	−	−	+	−	−	−	−	−	−
	046	−	−	++	−	−	+	−	−	−	−	−	−
	047	−	−	+	−	−	+	−	−	−	−	−	−
	048	−	−	+	−	−	+	−	−	−	−	−	−

Appendix 20 - 1 Individual urinary findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Color	Cloudy	Volume (mL/18hrs)	Specific gravity	pH	Protein	Glucose	Ketone body	Occult blood	Urobilinogen	Bilirubin
0	507	PY	−	9.4	1.050	8.5	+	−	−	−	0.1	−
	508	PY	−	7.6	1.072	8.5	+	−	−	−	0.1	−
	509	PY	−	10.3	1.068	8.5	+	−	−	−	0.1	−
	510	PY	−	11.0	1.032	8.0	−	−	−	−	0.1	−
	511	PY	−	16.6	1.030	8.0	±	−	−	−	0.1	−
	512	PY	−	4.2	1.016	8.0	−	−	−	−	0.1	−
20	519	PY	−	11.2	1.028	8.0	±	−	−	−	0.1	−
	520	PY	−	6.9	1.022	8.0	−	−	−	−	0.1	−
	521	PY	−	8.2	1.072	8.0	+	−	−	−	0.1	−
	522	PY	+	6.5	1.024	8.0	−	−	−	−	0.1	−
	523	PY	−	4.6	1.056	8.0	±	−	−	−	0.1	−
	524	PY	−	8.3	1.050	8.5	±	−	−	−	0.1	−

Color : PY(pale yellow)
Cloudy : −(negligible), +(cloudy)
Protein : −(negligible), ±(15～30mg/dL), +(30mg/dL)
Glucose : −(negligible)
Ketone body : −(negligible)
Occult blood : −(negligible), ±(trace)
Urobilinogen : Ehrlich unit/dL
Bilirubin : −(negligible)

Appendix 20 - 2 Individual urinary findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Color	Cloudy	Volume (mL/18hrs)	Specific gravity	pH	Protein	Glucose	Ketone body	Occult blood	Urobilinogen	Bilirubin
60	531	PY	+	20.6	1.036	8.5	±	−	−	−	0.1	−
	532	PY	+	22.3	1.062	8.5	±	−	−	−	0.1	−
	533	PY	−	14.5	1.042	8.5	±	−	−	−	0.1	−
	534	PY	−	12.0	1.052	8.5	±	−	−	−	0.1	−
	535	PY	−	9.0	1.064	8.5	+	−	−	−	0.1	−
	536	PY	−	6.7	1.062	8.0	+	−	−	−	0.1	−
200	543	PY	−	8.5	1.064	8.0	+	−	−	−	0.1	−
	544	PY	−	13.5	1.046	8.5	±	−	−	−	0.1	−
	545	PY	−	10.1	1.038	8.5	±	−	−	−	0.1	−
	546	PY	−	12.9	1.028	8.0	±	−	−	−	0.1	−
	547	PY	−	7.4	1.044	6.5	±	−	−	±	0.1	−
	548	PY	−	12.5	1.044	8.5	±	−	−	−	0.1	−

Appendix 20 - 3 Individual urinary findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Erythro-cytes	Leuko-cytes	Crystals			Epithelial cells			Casts			Fat globules
				Mg	Ca	Ams	Sq	R	S	G	H	W	
0	507	−	−	++	−	−	+	−	−	−	−	−	−
	508	−	−	++	−	−	+	−	−	−	−	−	−
	509	−	−	−	−	−	+	−	−	−	−	−	−
	510	−	−	+	−	−	+	−	−	−	−	−	−
	511	−	−	−	−	−	++	−	−	−	−	−	−
	512	−	−	−	−	−	+	−	−	−	−	−	−
20	519	−	−	+	−	−	+	−	−	−	−	−	−
	520	−	−	−	−	−	+	−	−	−	−	−	−
	521	−	−	−	−	−	+	−	−	−	−	−	−
	522	−	−	−	−	−	+	−	−	−	−	−	−
	523	−	−	++	−	−	+	−	−	−	−	−	−
	524	−	−	++	−	−	+	−	−	−	−	−	−

− : Not observed; + : A few in some fields; ++ : A few in all fields

Crystals
- Mg(ammonium magnesium phosphate)
- Ca(calcium phosphate)
- Ams(amorphous)

Epithelial cells
- Sq(squamous)
- R(round)
- S(spindle)

Casts
- G(granule)
- H(hyaline)
- W(waxy)

Appendix 20 - 4 Individual urinary findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 11 weeks of age >

Dose (mg/kg)	Animal number	Erythro-cytes	Leuko-cytes	Crystals			Epithelial cells			Casts			Fat globules
				Mg	Ca	Ams	Sq	R	S	G	H	W	
60	531	−	−	+	−	−	+	−	−	−	−	−	−
	532	−	−	+	−	−	+	−	−	−	−	−	−
	533	−	−	−	−	−	+	−	−	−	−	−	−
	534	−	−	++	−	−	+	−	−	−	−	−	−
	535	−	−	+	−	−	+	−	−	−	−	−	−
	536	−	−	+	−	−	+	−	−	−	−	−	−
200	543	−	−	++	−	−	++	−	−	−	−	−	−
	544	−	−	++	−	−	+	−	−	−	−	−	−
	545	−	−	−	−	−	+	−	−	−	−	−	−
	546	−	−	−	−	−	+	−	−	−	−	−	−
	547	−	−	−	−	−	+	−	−	−	−	−	−
	548	−	−	−	−	−	+	−	−	−	−	−	−

Appendix 21 - 1 Individual hematological findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	001	484	9.2	30.8	64	19.0	29.9	243	12.9	14.5
	002	458	8.9	28.8	63	19.4	30.9	230	13.7	14.2
	003	483	8.9	29.6	61	18.4	30.1	221	14.1	14.5
	004	513	9.7	32.0	62	18.9	30.3	206	13.7	15.1
	005	509	10.2	32.8	64	20.0	31.1	241	13.5	14.6
	006	476	9.9	31.6	66	20.8	31.3	204	13.4	14.6
	Mean	487	9.5	30.9	63	19.4	30.6	224	13.6	14.6
20	013	471	9.4	30.0	64	20.0	31.3	244	14.0	15.0
	014	483	10.0	32.6	67	20.7	30.7	206	14.1	14.9
	015	431	8.0	26.5	61	18.6	30.2	254	13.2	15.2
	016	467	9.5	30.5	65	20.3	31.1	201	13.5	14.6
	017	531	8.7	29.6	56	16.4	29.4	197	13.8	13.7
	018	518	10.6	33.1	64	20.5	32.0	189	13.5	15.7
	Mean	484	9.4	30.4	63	19.4	30.8	215	13.7	14.9
60	025	469	9.1	29.6	63	19.4	30.7	255	13.8	16.2
	026	506	9.6	31.0	61	19.0	31.0	203	13.8	16.8
	027	440	8.4	27.6	63	19.1	30.4	221	13.9	15.8
	028	449	8.7	28.3	63	19.4	30.7	234	13.6	13.7
	029	503	9.9	31.9	63	19.7	31.0	248	13.0	15.4
	030	476	9.9	31.9	67	20.8	31.0	244	13.1	15.6
	Mean	474	9.3	30.1	63	19.6	30.8	234	13.5	15.6
200	037	496	9.1	30.5	61	18.3	29.8	266	13.0	15.0
	038	553	10.6	33.4	60	19.2	31.7	196	13.4	14.5
	039	455	8.8	29.7	65	19.3	29.6	207	13.3	15.0
	040	474	9.5	30.2	64	20.0	31.5	256	13.5	14.8
	041	500	9.8	32.5	65	19.6	30.2	206	13.3	14.6
	042	523	10.2	32.6	62	19.5	31.3	239	13.7	14.9
	Mean	500	9.7	31.5	63	19.3	30.7	228	13.4	14.8

Appendix 21 - 2 Individual hematological findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	001	24	0	0	0	6	89	5	0	158
	002	21	0	0	0	9	86	5	0	122
	003	11	0	0	0	15	84	1	0	167
	004	10	0	0	0	18	77	5	0	170
	005	18	0	0	0	21	76	3	0	152
	006	15	0	0	0	22	73	5	0	142
	Mean	17	0	0	0	15	81	4	0	152
20	013	25	0	0	0	15	82	3	0	175
	014	9	0	0	0	17	83	0	0	136
	015	19	0	0	0	13	85	2	0	163
	016	17	0	0	0	11	85	4	0	142
	017	25	0	0	1	31	66	2	0	126
	018	39	0	0	0	7	92	1	0	132
	Mean	22	0	0	0	16	82	2	0	146
60	025	25	0	1	0	19	72	8	0	158
	026	15	0	0	0	18	82	0	0	165
	027	9	0	2	1	16	80	1	0	176
	028	16	0	0	0	15	82	3	0	159
	029	26	0	1	0	15	80	4	0	157
	030	50	0	1	0	15	82	2	0	140
	Mean	24	0	1	0	16	80	3	0	159
200	037	17	0	1	0	17	80	2	0	198
	038	19	0	1	0	16	79	4	0	130
	039	13	0	0	0	17	79	4	0	178
	040	23	0	0	0	18	78	4	0	183
	041	12	0	0	0	13	85	2	0	158
	042	17	0	0	0	16	83	1	0	176
	Mean	17	0	0	0	16	81	3	0	171

Appendix 22 - 1 Individual hematological findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	501	497	8.8	28.6	58	17.7	30.8	187	14.5	14.6
	502	518	10.5	33.3	64	20.3	31.5	195	13.9	13.5
	503	508	9.1	29.6	58	17.9	30.7	204	13.7	14.7
	504	576	10.7	35.0	61	18.6	30.6	209	14.1	14.0
	505	468	8.7	28.0	60	18.6	31.1	200	13.3	13.7
	506	512	11.1	34.4	67	21.7	32.3	191	14.0	14.5
	Mean	513	9.8	31.5	61	19.1	31.2	198	13.9	14.2
20	513	483	9.5	30.2	63	19.7	31.5	224	13.7	14.5
	514	526	10.8	34.2	65	20.5	31.6	197	13.8	13.9
	515	500	9.0	29.0	58	18.0	31.0	187	14.1	13.6
	516	516	10.3	32.7	63	20.0	31.5	254	14.2	13.2
	517	548	10.6	34.5	63	19.3	30.7	261	14.3	13.5
	518	569	11.4	36.5	64	20.0	31.2	207	13.7	13.2
	Mean	524	10.3	32.9	63	19.6	31.3	222	14.0	13.7
60	525	534	10.0	32.8	61	18.7	30.5	156	13.4	14.0
	526	542	10.4	32.8	61	19.2	31.7	221	13.9	13.9
	527	492	9.5	31.2	63	19.3	30.4	193	13.1	14.3
	528	517	10.6	34.4	67	20.5	30.8	177	13.9	13.8
	529	542	10.3	32.5	60	19.0	31.7	230	14.5	14.4
	530	522	11.0	34.2	66	21.1	32.2	233	14.1	14.1
	Mean	525	10.3	33.0	63	19.6	31.2	202	13.8	14.1
200	537	551	10.5	34.1	62	19.1	30.8	245	14.1	14.6
	538	531	10.7	34.5	65	20.2	31.0	261	13.0	13.3
	539	490	10.2	32.6	67	20.8	31.3	177	13.4	14.5
	540	559	11.4	36.7	66	20.4	31.1	199	14.3	14.4
	541	544	10.8	34.5	63	19.9	31.3	154	12.7	13.3
	542	532	11.3	36.0	68	21.2	31.4	237	14.4	15.0
	Mean	535	10.8	34.7	65	20.3	31.2	212	13.7	14.2

Appendix 22 - 2 Individual hematological findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	501	26	0	0	0	16	83	1	0	196
	502	21	0	0	0	8	88	4	0	143
	503	25	0	0	1	19	80	0	0	195
	504	26	0	0	0	12	84	4	0	162
	505	19	0	0	0	13	85	2	0	142
	506	43	0	1	0	10	87	2	0	137
	Mean	27	0	0	0	13	85	2	0	163
20	513	42	0	0	0	4	95	1	0	155
	514	24	0	0	0	5	92	3	0	146
	515	20	0	0	0	3	93	4	0	179
	516	21	0	0	0	9	87	4	0	145
	517	18	0	1	0	9	88	2	0	156
	518	15	0	0	0	13	85	2	0	125
	Mean	23	0	0	0	7	90	3	0	151
60	525	23	0	0	0	5	94	1	0	141
	526	25	0	0	0	7	90	3	0	155
	527	23	0	0	1	7	89	3	0	170
	528	18	0	0	0	9	90	1	0	128
	529	25	0	1	0	14	84	1	0	173
	530	42	0	0	0	10	89	1	0	158
	Mean	26	0	0	0	9	89	2	0	154
200	537	25	0	0	0	15	84	1	0	164
	538	26	0	0	0	11	88	1	0	182
	539	17	0	0	0	5	94	1	0	161
	540	45	0	0	0	5	95	0	0	165
	541	40	0	0	0	7	92	1	0	170
	542	40	0	1	0	24	71	4	0	162
	Mean	32	0	0	0	11	87	1	0	167

Appendix 23 - 1 Individual hematological findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	007	889	16.7	47.4	53	18.8	35.2	24	13.7	19.5
	008	773	15.3	43.6	56	19.8	35.1	34	12.8	17.7
	009	821	14.9	42.2	51	18.1	35.3	21	12.9	18.3
	010	813	15.4	43.0	53	18.9	35.8	24	12.7	17.9
	011	773	15.3	42.5	55	19.8	36.0	27	13.0	18.7
	012	778	14.7	42.6	55	18.9	34.5	46	12.7	15.6
	Mean	808	15.4	43.6	54	19.1	35.3	29	13.0	18.0
20	019	738	15.0	41.6	56	20.3	36.1	23	13.2	18.0
	020	739	14.1	42.3	57	19.1	33.3	50	12.9	16.9
	021	844	16.3	46.6	55	19.3	35.0	48	13.0	16.0
	022	890	16.9	46.6	52	19.0	36.3	27	12.5	18.1
	023	822	15.4	43.5	53	18.7	35.4	29	13.0	16.2
	024	856	16.5	46.5	54	19.3	35.5	29	12.6	17.8
	Mean	815	15.7	44.5	55	19.3	35.3	34	12.9	17.2
60	031	784	15.5	43.7	56	19.8	35.5	24	13.0	19.1
	032	804	14.8	43.1	54	18.4	34.3	33	12.6	16.9
	033	812	14.9	43.6	54	18.3	34.2	35	12.9	18.2
	034	777	14.9	42.3	54	19.2	35.2	33	12.9	17.5
	035	840	16.2	45.8	55	19.3	35.4	17	12.9	18.4
	036	841	15.4	43.8	52	18.3	35.2	48	12.2	16.7
	Mean	810	15.3	43.7	54	18.9	35.0	32	12.8	17.8
200	043	819	15.8	44.5	54	19.3	35.5	42	12.4	16.5
	044	733	14.4	41.0	56	19.6	35.1	30	13.5	17.3
	045	847	16.5	46.4	55	19.5	35.6	26	13.5	18.5
	046	835	14.7	42.7	51	17.6	34.4	42	12.9	16.9
	047	787	14.3	42.0	53	18.2	34.0	33	12.5	17.5
	048	828	14.5	42.2	51	17.5	34.4	35	12.2	17.2
	Mean	808	15.0	43.1	53	18.6	34.8	35	12.8	17.3

Appendix 23 - 2 Individual hematological findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	007	51	0	0	0	10	89	1	0	145
	008	46	0	1	0	13	82	4	0	117
	009	82	0	1	0	10	88	1	0	146
	010	93	0	1	0	11	87	1	0	163
	011	53	0	2	1	19	77	1	0	166
	012	55	0	0	1	18	77	4	0	130
	Mean	63	0	1	0	14	83	2	0	145
20	019	88	0	0	0	5	95	0	0	122
	020	76	0	3	0	17	79	1	0	121
	021	72	0	0	0	6	92	2	0	135
	022	103	0	0	0	9	90	1	0	127
	023	74	0	0	0	21	79	0	0	122
	024	74	0	1	0	6	93	0	0	121
	Mean	81	0	1	0	11	88	1	0	125
60	031	114	0	0	0	14	86	0	0	107
	032	60	0	0	0	11	88	1	0	133
	033	79	0	0	0	10	89	1	0	129
	034	79	0	0	0	8	91	1	0	135
	035	79	0	0	0	8	91	1	0	133
	036	86	0	1	0	19	79	1	0	139
	Mean	83	0	0	0	12	87	1	0	129
200	043	59	0	0	0	15	84	1	0	133
	044	67	0	0	0	10	90	0	0	118
	045	76	0	0	0	21	78	1	0	133
	046	89	0	0	0	16	84	0	0	158
	047	66	0	0	0	22	78	0	0	148
	048	104	0	1	0	15	81	3	0	158
	Mean	77	0	0	0	17	83	1	0	141

Appendix 24 - 1 Individual hematological findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	RBC ($10^4/\mu L$)	Hb (g/dL)	Ht (%)	MCV (fL)	MCH (pg)	MCHC (%)	Ret. (‰)	PT (sec)	APTT (sec)
0	507	787	15.1	42.2	54	19.2	35.8	25	12.4	15.8
	508	786	16.1	45.7	58	20.5	35.2	31	12.5	16.3
	509	770	14.9	42.1	55	19.4	35.4	20	13.2	15.7
	510	786	15.1	42.3	54	19.2	35.7	24	13.3	15.2
	511	805	16.1	44.8	56	20.0	35.9	19	13.4	16.5
	512	826	15.4	43.9	53	18.6	35.1	32	12.5	15.3
	Mean	793	15.5	43.5	55	19.5	35.5	25	12.9	15.8
20	519	892	16.4	46.2	52	18.4	35.5	16	14.4	15.2
	520	853	16.0	45.5	53	18.8	35.2	27	12.9	14.9
	521	765	14.7	40.7	53	19.2	36.1	20	13.1	15.6
	522	758	14.5	41.0	54	19.1	35.4	26	12.9	14.3
	523	772	15.8	44.1	57	20.5	35.8	24	12.4	16.8
	524	794	15.3	43.0	54	19.3	35.6	18	12.9	16.8
	Mean	806	15.5	43.4	54	19.2	35.6	22	13.1	15.6
60	531	790	15.3	43.0	54	19.4	35.6	19	12.5	14.7
	532	764	14.3	40.8	53	18.7	35.0	27	12.5	15.6
	533	838	15.7	44.6	53	18.7	35.2	15	12.7	14.7
	534	763	14.5	41.1	54	19.0	35.3	22	12.7	14.7
	535	784	15.1	42.5	54	19.3	35.5	23	12.6	16.4
	536	793	14.7	42.2	53	18.5	34.8	20	12.8	16.6
	Mean	789	14.9	42.4	54	18.9	35.2	21	12.6	15.5
200	543	827	16.2	45.2	55	19.6	35.8	17	12.3	17.3
	544	804	15.3	43.5	54	19.0	35.2	21	12.7	15.4
	545	773	15.1	42.7	55	19.5	35.4	25	12.8	18.3
	546	845	15.8	44.8	53	18.7	35.3	19	12.9	15.9
	547	802	15.3	42.9	53	19.1	35.7	28	12.3	17.2
	548	809	15.3	43.2	53	18.9	35.4	18	12.5	14.5
	Mean	810	15.5	43.7	54	19.1	35.5	21	12.6	16.4

Appendix 24 - 2 Individual hematological findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	WBC ($10^2/\mu L$)	Differential leukocyte counts (%)							Plat. ($10^4/\mu L$)
			Baso	Eosin.	Neutro. Stab	Neutro. Seg.	Lymph	Mono	Othe	
0	507	70	0	1	0	7	89	3	0	131
	508	50	0	2	0	7	90	1	0	122
	509	47	0	4	0	12	81	3	0	134
	510	42	0	0	0	13	84	3	0	146
	511	34	0	1	0	9	90	0	0	150
	512	27	0	0	0	16	83	1	0	124
	Mean	45	0	1	0	11	86	2	0	135
20	519	56	0	3	0	8	87	2	0	156
	520	33	0	1	0	8	89	2	0	126
	521	67	0	1	0	12	85	2	0	138
	522	37	0	2	0	7	89	2	0	149
	523	37	0	0	0	15	84	1	0	130
	524	33	0	1	0	14	85	0	0	138
	Mean	44	0	1	0	11	87	2	0	140
60	531	51	0	0	0	8	91	1	0	108
	532	47	0	4	0	4	91	1	0	133
	533	45	0	0	0	6	93	1	0	137
	534	33	0	1	0	16	83	0	0	106
	535	66	0	0	1	9	88	2	0	121
	536	46	0	0	0	7	93	0	0	129
	Mean	48	0	1	0	8	90	1	0	122
200	543	33	0	0	0	8	91	1	0	139
	544	39	0	1	0	7	89	3	0	109
	545	44	0	2	0	8	90	0	0	146
	546	29	0	1	0	10	86	3	0	154
	547	23	0	2	0	16	81	1	0	144
	548	32	0	0	0	8	90	2	0	181
	Mean	33	0	1	0	10	88	2	0	146

Appendix 25 - 1 Individual blood biochemical findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	001	418	110	30	939	0.87	77	4.82	2.96	1.59	77	30
	002	371	111	23	1097	1.17	93	4.71	2.97	1.71	85	27
	003	620	115	24	1023	0.78	64	4.74	3.17	2.02	74	30
	004	457	121	26	1000	1.18	69	4.92	3.06	1.65	74	31
	005	332	120	25	1017	0.89	119	4.64	2.87	1.62	83	66
	006	390	115	21	905	0.99	106	4.65	2.84	1.57	78	30
	Mean	431	115	25	997	0.98	88	4.75	2.98	1.69	79	36
20	013	556	140	32	1094	1.06	77	4.63	2.93	1.72	81	26
	014	416	111	26	899	0.94	93	4.64	3.06	1.94	69	33
	015	529	113	22	1094	0.72	87	4.71	2.83	1.51	70	24
	016	552	115	18	956	0.78	71	4.94	3.20	1.84	63	36
	017	600	150	38	978	1.15	85	5.03	3.06	1.55	93	36
	018	359	114	25	944	0.74	96	4.58	2.86	1.66	72	40
	Mean	502	124	27	994	0.90	85	4.76	2.99	1.70	75	33
60	025	502	110	22	1096	1.05	95	4.99	3.05	1.57	74	24
	026	471	136	24	1079	0.80	94	5.14	3.16	1.60	64	24
	027	366	107	24	713	1.18	77	5.01	3.07	1.58	78	31
	028	415	119	22	1171	1.17	97	4.83	2.94	1.56	77	23
	029	314	125	21	859	0.85	90	4.94	3.11	1.70	72	33
	030	299	106	19	1288	0.84	107	4.72	2.83	1.50	68	25
	Mean	395	117	22	1034	0.98	93	4.94	3.03	1.59	72	27
200	037	569	136	25	1045	1.64	80	5.08	3.28	1.82	75	25
	038	648	139	21	858	1.31	69	5.01	3.20	1.77	62	21
	039	487	114	25	738	1.46	90	5.01	3.07	1.58	73	23
	040	410	133	25	1361	1.32	94	4.88	2.96	1.54	66	30
	041	444	131	28	1394	1.21	108	5.04	3.07	1.56	84	27
	042	651	134	17	901	1.03	63	4.91	3.03	1.61	56	19
	Mean	535	131	24	1050	1.33	84	4.99	3.10	1.65	69	24

Appendix 25 - 2 Individual blood biochemical findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	001	124	143	7.6	0.37	0.37	9.7	8.6	141	6.56	108
	002	120	117	9.5	0.42	0.41	10.2	8.9	141	6.98	109
	003	118	130	6.6	0.38	0.41	9.9	9.2	140	7.05	108
	004	114	131	14.6	0.46	0.41	10.2	9.2	141	7.25	109
	005	136	129	10.9	0.38	0.46	9.9	9.5	138	8.02	106
	006	123	148	6.2	0.51	0.40	9.8	9.3	141	7.46	108
	Mean	123	133	9.2	0.42	0.41	10.0	9.1	140	7.22	108
20	013	125	121	4.5	0.42	0.41	9.7	8.6	142	5.68	109
	014	104	133	14.8	0.41	0.40	9.8	8.3	142	6.72	110
	015	111	131	3.7	0.41	0.39	10.1	9.4	142	7.09	108
	016	110	140	9.5	0.42	0.39	10.2	9.6	141	6.91	107
	017	147	129	16.3	0.44	0.40	9.9	9.3	141	7.03	109
	018	117	129	8.8	0.39	0.40	9.3	9.1	139	6.95	104
	Mean	119	131	9.6	0.42	0.40	9.8	9.1	141	6.73	108
60	025	117	146	13.0	0.47	0.39	9.8	8.5	143	5.59	109
	026	103	138	11.6	0.42	0.39	9.6	9.0	142	6.71	109
	027	115	138	10.0	0.40	0.44	10.2	9.4	140	7.05	108
	028	118	145	9.3	0.46	0.40	10.0	9.1	142	7.20	109
	029	116	137	13.5	0.42	0.37	9.8	8.8	142	7.42	109
	030	106	134	5.0	0.37	0.41	9.9	9.2	143	6.13	106
	Mean	113	140	10.4	0.42	0.40	9.9	9.0	142	6.68	108
200	037	119	148	9.9	0.33	0.42	9.8	8.7	141	6.17	108
	038	92	138	17.1	0.41	0.39	9.8	9.6	140	6.89	108
	039	107	132	12.5	0.44	0.43	10.0	9.3	141	7.42	107
	040	109	134	12.5	0.40	0.37	9.9	9.1	138	6.98	108
	041	125	147	22.3	0.42	0.40	9.8	8.7	139	6.88	107
	042	96	153	14.4	0.46	0.37	9.7	9.8	140	6.72	106
	Mean	108	142	14.8	0.41	0.40	9.8	9.2	140	6.84	107

Appendix 26 - 1 Individual blood biochemical findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	501	752	142	20	1244	1.01	96	5.01	3.09	1.61	74	29
	502	530	134	22	903	1.06	111	4.88	3.19	1.89	115	31
	503	604	125	17	1049	0.67	92	4.90	3.04	1.63	64	29
	504	424	122	17	940	0.71	77	5.03	3.08	1.58	57	27
	505	280	116	23	1075	0.99	88	4.64	2.84	1.58	86	23
	506	360	92	14	957	1.07	75	5.03	3.35	1.99	77	33
	Mean	492	122	19	1028	0.92	90	4.92	3.10	1.71	79	29
20	513	372	106	17	1173	0.79	92	4.94	3.09	1.67	85	25
	514	551	120	23	992	1.01	87	4.76	2.97	1.66	81	29
	515	610	133	27	731	1.04	68	4.94	3.06	1.63	69	22
	516	362	113	14	810	0.55	108	4.95	3.05	1.61	72	26
	517	570	134	21	829	0.99	101	4.72	2.92	1.62	59	22
	518	334	105	17	951	0.86	104	4.88	3.10	1.74	68	25
	Mean	467	119	20	914	0.87	93	4.87	3.03	1.66	72	25
60	525	470	116	18	1128	0.82	107	4.79	3.04	1.74	85	26
	526	528	122	17	998	0.95	80	4.75	2.97	1.67	66	23
	527	634	107	16	917	0.99	67	5.14	3.20	1.65	80	25
	528	393	115	17	940	1.35	91	4.93	3.05	1.62	78	35
	529	462	120	21	718	0.90	76	4.90	3.20	1.88	71	25
	530	563	118	24	832	0.87	81	4.80	3.02	1.70	78	32
	Mean	508	116	19	922	0.98	84	4.89	3.08	1.71	76	28
200	537	432	125	17	1204	1.55	96	5.20	3.28	1.71	83	24
	538	417	102	18	880	1.15	89	4.95	3.09	1.66	94	26
	539	332	109	19	665	0.88	85	4.90	3.14	1.78	91	23
	540	504	127	16	949	1.89	109	5.19	3.21	1.62	63	29
	541	548	127	24	868	1.04	107	4.96	3.20	1.82	97	34
	542	806	137	26	963	1.19	99	5.15	3.23	1.68	77	26
	Mean	507	121	20	922	1.28	98	5.06	3.19	1.71	84	27

Appendix 26 - 2 Individual blood biochemical findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 22 days of age >

Dose (mg/kg)	Animal number	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	501	109	142	19.4	0.39	0.41	9.9	10.0	142	7.89	109
	502	159	129	11.5	0.42	0.36	9.6	9.5	141	6.96	109
	503	94	122	11.3	0.36	0.39	10.0	9.8	143	7.36	110
	504	96	133	10.9	0.66	0.38	10.0	9.4	141	7.66	107
	505	127	128	11.7	0.35	0.37	10.1	9.6	141	7.84	108
	506	115	126	12.3	0.41	0.45	10.1	9.4	141	7.40	105
	Mean	117	130	12.9	0.43	0.39	10.0	9.6	142	7.52	108
20	513	121	129	13.6	0.40	0.37	10.2	9.8	140	7.04	108
	514	118	139	11.3	0.42	0.41	10.1	10.2	140	8.32	107
	515	101	122	9.0	0.37	0.40	10.0	9.1	143	6.85	107
	516	114	126	18.4	0.42	0.42	9.9	8.5	141	7.44	108
	517	97	115	19.8	0.38	0.44	9.8	9.3	140	7.63	107
	518	112	157	9.9	0.41	0.39	9.8	9.0	143	6.84	110
	Mean	111	131	13.7	0.40	0.41	10.0	9.3	141	7.35	108
60	525	122	139	10.5	0.36	0.37	10.0	9.7	142	6.72	109
	526	95	130	12.9	0.35	0.40	10.0	10.1	141	7.84	107
	527	113	144	15.7	0.86	0.40	10.5	9.4	143	6.52	107
	528	119	144	14.2	0.42	0.39	10.1	9.1	143	7.08	107
	529	112	128	9.5	0.40	0.40	9.9	9.6	141	7.08	107
	530	123	131	14.9	0.90	0.44	9.6	9.2	140	6.95	105
	Mean	114	136	13.0	0.55	0.40	10.0	9.5	142	7.03	107
200	537	125	131	15.0	0.45	0.37	9.8	9.6	144	6.25	113
	538	127	140	14.1	0.41	0.38	9.7	9.2	141	7.71	109
	539	132	143	8.0	0.38	0.35	9.7	9.4	139	7.38	106
	540	103	128	19.5	0.41	0.45	9.8	8.9	141	6.71	109
	541	147	121	13.2	0.39	0.36	10.0	9.5	141	6.69	107
	542	115	138	17.7	0.40	0.33	9.7	9.0	142	5.88	109
	Mean	125	134	14.6	0.41	0.37	9.8	9.3	141	6.77	109

Appendix 27 - 1 Individual blood biochemical findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	007	358	72	43	451	0.85	80	6.72	3.41	1.03	72	55
	008	217	68	34	617	0.67	51	6.09	3.10	1.04	85	51
	009	812	72	48	526	0.96	55	6.47	3.20	0.98	76	121
	010	293	83	57	516	0.70	41	6.33	3.21	1.03	55	112
	011	325	70	35	547	0.87	37	6.20	3.07	0.98	87	69
	012	200	74	49	732	1.05	53	6.16	3.24	1.11	85	51
	Mean	368	73	44	565	0.85	53	6.33	3.21	1.03	77	77
20	019	376	72	35	603	0.63	75	6.29	3.15	1.00	65	88
	020	223	84	40	490	0.77	42	5.89	3.16	1.16	81	111
	021	276	68	39	333	0.79	47	6.51	3.38	1.08	79	108
	022	263	89	40	569	0.43	51	6.07	3.31	1.20	62	192
	023	279	69	39	497	1.01	68	6.16	3.17	1.06	69	133
	024	327	61	31	474	0.85	56	6.37	3.54	1.25	78	112
	Mean	291	74	37	494	0.75	57	6.22	3.29	1.13	72	124
60	031	337	78	40	516	0.82	106	6.24	3.22	1.07	71	54
	032	251	77	35	582	0.81	36	6.00	3.35	1.26	56	83
	033	234	60	35	602	0.81	77	6.51	3.38	1.08	79	87
	034	225	76	46	546	0.55	96	6.15	3.12	1.03	58	97
	035	344	79	42	443	0.63	61	6.53	3.10	0.90	55	71
	036	203	82	37	523	0.60	47	6.32	3.47	1.22	56	93
	Mean	266	75	39	535	0.70	71	6.29	3.27	1.09	63	81
200	043	332	78	52	606	0.64	38	6.35	3.45	1.19	62	110
	044	147	63	24	404	0.93	115	6.16	3.19	1.07	69	60
	045	284	82	42	532	0.95	85	6.31	3.25	1.06	87	57
	046	302	81	41	614	0.80	66	6.29	3.27	1.08	76	101
	047	268	59	35	518	0.59	48	6.05	3.01	0.99	69	53
	048	450	74	40	617	0.77	45	6.39	3.20	1.00	85	103
	Mean	297	73	39	549	0.78	66	6.26	3.23	1.07	75	81

Appendix 27 - 2 Individual blood biochemical findings of male rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	007	112	146	21.3	0.63	0.32	10.4	7.5	146	4.90	103
	008	117	144	12.9	0.57	0.28	9.7	7.2	140	3.98	100
	009	125	148	14.2	0.57	0.37	10.0	7.2	144	4.67	104
	010	100	140	16.5	0.59	0.35	10.2	7.5	142	4.33	102
	011	123	146	12.2	0.51	0.37	9.9	7.0	144	4.57	104
	012	125	149	13.8	0.45	0.36	10.4	8.0	142	4.99	102
	Mean	117	146	15.2	0.55	0.34	10.1	7.4	143	4.57	103
20	019	106	161	12.6	0.58	0.30	9.9	7.3	142	4.74	101
	020	131	173	13.1	0.62	0.32	9.9	7.3	143	4.56	103
	021	127	156	13.4	0.59	0.28	10.2	7.5	145	4.81	100
	022	118	166	17.0	0.64	0.23	10.0	7.6	141	4.82	102
	023	115	166	14.1	0.60	0.28	10.4	7.5	143	4.87	102
	024	127	154	16.0	0.52	0.32	10.4	7.4	143	4.71	102
	Mean	121	163	14.4	0.59	0.29	10.1	7.4	143	4.75	102
60	031	111	150	17.5	0.63	0.35	10.1	7.3	143	4.31	101
	032	96	150	12.0	0.56	0.33	9.7	7.4	143	4.48	104
	033	117	165	12.4	0.55	0.30	10.3	6.7	144	4.99	101
	034	102	157	13.3	0.50	0.37	10.0	7.2	143	4.45	101
	035	90	170	17.6	0.58	0.27	10.4	7.1	144	4.42	101
	036	102	147	13.8	0.54	0.30	10.3	7.5	142	4.70	103
	Mean	103	157	14.4	0.56	0.32	10.1	7.2	143	4.56	102
200	043	117	157	11.0	0.62	0.28	10.1	7.2	147	4.10	103
	044	102	167	14.4	0.66	0.30	9.9	7.1	144	4.29	103
	045	124	156	17.6	0.58	0.27	10.0	7.0	142	4.43	100
	046	113	148	13.8	0.59	0.32	10.2	7.2	144	4.77	103
	047	106	159	12.2	0.55	0.37	10.1	7.4	143	4.97	100
	048	131	178	14.6	0.63	0.29	10.2	7.1	144	4.56	103
	Mean	116	161	13.9	0.61	0.31	10.1	7.2	144	4.52	102

Appendix 28 - 1 Individual blood biochemical findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	LDH (IU/L)	GOT (IU/L)	GPT (IU/L)	ALP (IU/L)	γ-GTP (IU/L)	ChE (IU/L)	T.P. (g/dL)	Alb. (g/dL)	A/G	T-Cho. (mg/dL)	T.G. (mg/dL)
0	507	583	97	47	323	1.24	472	6.74	3.72	1.23	78	29
	508	212	67	27	427	1.53	605	6.67	3.71	1.25	92	23
	509	307	70	31	416	1.48	245	5.63	3.30	1.42	66	33
	510	259	68	28	325	1.45	287	6.87	3.87	1.29	92	29
	511	194	63	31	228	2.26	559	6.57	3.65	1.25	97	35
	512	416	82	25	470	1.72	234	6.08	3.38	1.25	77	16
	Mean	329	75	32	365	1.61	400	6.43	3.61	1.28	84	28
20	519	480	75	35	259	0.78	325	6.61	3.89	1.43	73	27
	520	477	74	30	387	1.61	519	6.25	3.66	1.41	74	26
	521	333	63	23	205	1.15	270	6.61	3.68	1.26	90	46
	522	132	62	25	431	0.93	473	6.24	3.46	1.24	81	25
	523	278	60	24	459	0.95	548	7.04	3.91	1.25	97	17
	524	195	57	22	307	1.36	464	6.74	4.01	1.47	68	33
	Mean	316	65	27	341	1.13	433	6.58	3.77	1.34	81	29
60	531	324	82	33	477	1.59	360	6.31	3.53	1.27	80	18
	532	302	60	22	410	1.22	320	6.22	3.73	1.50	105	56
	533	437	74	30	226	1.16	260	6.43	3.72	1.37	79	21
	534	255	81	33	327	1.19	290	6.00	3.35	1.26	72	14
	535	427	80	34	450	1.69	338	6.68	3.72	1.26	65	13
	536	352	90	45	291	1.58	745	7.11	3.93	1.24	80	16
	Mean	350	78	33	364	1.41	386	6.46	3.66	1.32	80	23
200	543	307	63	33	329	1.93	604	7.23	4.01	1.25	110	24
	544	408	79	25	461	2.00	275	6.09	3.35	1.22	99	29
	545	241	64	24	244	2.08	312	6.52	3.78	1.38	88	19
	546	489	79	28	306	1.04	281	6.75	3.98	1.44	89	20
	547	238	62	27	279	0.53	516	6.60	3.57	1.18	71	24
	548	570	79	26	402	1.77	283	6.18	3.39	1.22	81	16
	Mean	376	71	27	337	1.56	379	6.56	3.68	1.28	90	22

Appendix 28 - 2 Individual blood biochemical findings of female rats treated orally with 2-*tert*-butylphenol during 18 days from 4 days of age to weaning

< 85 days of age >

Dose (mg/kg)	Animal number	PL (mg/dL)	Glu. (mg/dL)	BUN (mg/dL)	Crea. (mg/dL)	T-Bil. (mg/dL)	Ca (mg/dL)	P (mg/dL)	Na (mEq/L)	K (mEq/L	Cl (mEq/L)
0	507	145	126	16.0	0.63	0.37	9.9	6.8	145	4.38	106
	508	149	143	11.1	0.60	0.30	10.1	7.1	144	4.46	106
	509	112	132	12.3	0.53	0.34	9.8	7.1	140	4.41	103
	510	153	142	14.4	0.62	0.30	10.5	7.5	145	4.06	103
	511	142	140	15.3	0.60	0.27	10.6	6.3	143	4.18	104
	512	121	146	10.3	0.51	0.31	10.3	7.2	144	4.27	103
	Mean	137	138	13.2	0.58	0.32	10.2	7.0	144	4.29	104
20	519	133	150	11.7	0.58	0.31	10.5	7.4	144	4.25	103
	520	127	130	13.8	0.65	0.31	10.2	7.0	144	4.39	104
	521	164	134	17.4	0.61	0.32	10.4	6.7	144	3.86	103
	522	133	125	16.0	0.62	0.31	10.3	7.0	143	3.98	103
	523	156	138	12.4	0.55	0.28	10.6	6.8	145	4.64	105
	524	126	151	15.5	0.59	0.28	10.4	6.4	144	4.37	104
	Mean	140	138	14.5	0.60	0.30	10.4	6.9	144	4.25	104
60	531	132	129	14.6	0.60	0.34	10.6	8.2	144	4.02	104
	532	177	163	11.0	0.68	0.26	10.5	7.0	142	3.94	103
	533	127	152	12.8	0.61	0.27	10.4	8.0	144	4.70	104
	534	120	113	15.9	0.59	0.28	10.3	7.4	142	4.20	106
	535	112	117	14.9	0.58	0.29	10.3	7.4	142	4.45	104
	536	149	126	17.4	0.69	0.39	9.9	6.0	142	4.55	104
	Mean	136	133	14.4	0.63	0.31	10.3	7.3	143	4.31	104
200	543	171	132	12.5	0.59	0.35	11.0	7.0	144	4.28	103
	544	152	129	14.6	0.63	0.33	10.1	6.9	143	4.37	106
	545	141	144	11.0	0.59	0.30	10.7	7.6	144	4.44	102
	546	151	144	11.9	0.60	0.28	10.5	7.4	146	4.29	103
	547	129	133	11.7	0.53	0.29	10.4	6.7	143	4.57	103
	548	139	135	14.5	0.53	0.32	10.0	7.5	144	4.49	104
	Mean	147	136	12.7	0.58	0.31	10.5	7.2	144	4.41	104

Appendix 29-1-1 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined		Findings
0	001	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules +
			Parathyroid	:	Not in section
			Thymus	:	Hemorrhage +
			Spleen	:	Hematopoiesis, extramedullary ++
	002	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules +
			Spleen	:	Hematopoiesis, extramedullary ++
	003	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Cyst, solitary, unilateral +
					Basophilic tubules +
			Spleen	:	Hematopoiesis, extramedullary +
	004	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules +
			Spleen	:	Hematopoiesis, extramedullary ++
	005	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules, unilateral +
					Fibrosis, focal, unilateral +
			Spleen	:	Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 29-1-2 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
0 (Continued)	006	NAD	a Liver	: Hematopoiesis, extramedullary +
			Kidney	: Cyst, solitary +
				Basophilic tubules, unilateral +
			Spleen	: Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 29-2 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
20	013	NAD	Liver	: Hematopoiesis, extramedullary +
	014	NAD	Liver	: Hematopoiesis, extramedullary +
	015	NAD	Liver	: Hematopoiesis, extramedullary +
	016	NAD	Liver	: Hematopoiesis, extramedullary +
	017	NAD	Liver	: Hematopoiesis, extramedullary +
	018	NAD	Liver	: Hematopoiesis, extramedullary +

NAD : No abnormalities detected; + : Slight

Appendix 29-3 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
60	025	NAD	Liver	: Hematopoiesis, extramedullary +
	026	NAD	Liver	: Hematopoiesis, extramedullary +
	027	NAD	Liver	: Hematopoiesis, extramedullary +
	028	NAD	Liver	: Hematopoiesis, extramedullary +
	029	NAD	Liver	: Hematopoiesis, extramedullary +
	030	NAD	Liver	: Hematopoiesis, extramedullary +

NAD : No abnormalities detected; + : Slight

Appendix 29-4-1 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined		Findings
200	037	NAD	a Liver	:	Hematopoiesis, extramedullary +
					Hypertrophy, hepatocyte, centrilobular +
			Kidney	:	Basophilic tubules +
			Spleen	:	Hematopoiesis, extramedullary ++
	038	NAD	a Liver	:	Hematopoiesis, extramedullary +
					Hypertrophy, hepatocyte, centrilobular +
			Kidney	:	Cyst, solitary, unilateral +
					Basophilic tubules, unilateral +
			Spleen	:	Hematopoiesis, extramedullary +
	039	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules, unilateral +
			Spleen	:	Hematopoiesis, extramedullary ++
	040	NAD	a Lung	:	Metaplasia, osseous +
			Liver	:	Hematopoiesis, extramedullary +
					Hypertrophy, hepatocyte, centrilobular +
			Spleen	:	Hematopoiesis, extramedullary ++
	041	NAD	a Liver	:	Hematopoiesis, extramedullary +
					Hypertrophy, hepatocyte, centrilobular +
			Kidney	:	Cyst, solitary, unilateral +
					Basophilic tubules +
			Spleen	:	Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 29-4-2 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined		Findings
200 (Continued)	042	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Cyst, multiple, unilateral +
					Basophilic tubules, unilateral +
			Spleen	:	Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 30-1 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined		Findings
0	501	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules +
			Spleen	:	Hematopoiesis, extramedullary +
	502	NAD	a Lung	:	Hemorrhage +
			Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Cyst, solitary, unilateral +
					Basophilic tubules, unilateral +
			Spleen	:	Hematopoiesis, extramedullary +
	503	NAD	a Lung	:	Accumulation, foam cell +
			Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules +
			Spleen		Hematopoiesis, extramedullary ++
	504	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules, unilateral +
			Spleen	:	Hematopoiesis, extramedullary ++
	505	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules, unilateral +
			Spleen	:	Hematopoiesis, extramedullary +
	506	NAD	a Liver	:	Hematopoiesis, extramedullary +
			Kidney	:	Basophilic tubules +
			Parathyroid	:	Not in section
			Spleen	:	Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus were examined microscopically.

Appendix 30-2 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
20	513	NAD	Liver	: Hematopoiesis, extramedullary +
	514	NAD	Liver	: Hematopoiesis, extramedullary +
	515	NAD	Liver	: Hematopoiesis, extramedullary +
	516	NAD	Liver	: Hematopoiesis, extramedullary +
	517	NAD	Liver	: Hematopoiesis, extramedullary +
	518	NAD	Liver	: Hematopoiesis, extramedullary +

NAD : No abnormalities detected; + : Slight

Appendix 30-3 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
60	525	NAD	Liver	: Hematopoiesis, extramedullary + Hypertrophy, hepatocyte, centrilobular +
	526	NAD	Liver	: Hematopoiesis, extramedullary +
	527	NAD	Liver	: Hematopoiesis, extramedullary +
	528	NAD	Liver	: Hematopoiesis, extramedullary +
	529	NAD	Liver	: Hematopoiesis, extramedullary +
	530	NAD	Liver	: Hematopoiesis, extramedullary +

NAD : No abnormalities detected; + : Slight

Appendix 30-4-1 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined	Findings
200	537	NAD	a Liver	: Hematopoiesis, extramedullary +
			Kidney	: Basophilic tubules +
			Spleen	: Hematopoiesis, extramedullary ++
	538	NAD	a Liver	: Hypertrophy, hepatocyte, centrilobular +
			Kidney	: Cyst, solitary +
				Basophilic tubules +
			Spleen	: Hematopoiesis, extramedullary +
	539	NAD	a Lung	: Metaplasia, osseous +
			Liver	: Hematopoiesis, extramedullary +
				Hypertrophy, hepatocyte, centrilobular +
			Spleen	: Hematopoiesis, extramedullary +
	540	NAD	a Liver	: Hematopoiesis, extramedullary +
			Parathyroid	: Not in section
			Spleen	: Hematopoiesis, extramedullary ++
	541	NAD	a Liver	: Hematopoiesis, extramedullary +
			Stomach	: Dilatation, fundic glandular lumen, glandular stomach +
			Kidney	: Basophilic tubules +
				Cellular infiltration, neutrophil, pelvic epithelium, unilateral +
			Parathyroid	: Not in section
			Spleen	: Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus were examined microscopically.

Appendix 30-4-2 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning < 22 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
200 (Continued)	542	NAD	a Liver	: Hematopoiesis, extramedullary +
				Hypertrophy, hepatocyte, centrilobular +
			Kidney	: Basophilic tubules, unilateral +
			Spleen	: Hematopoiesis, extramedullary ++

NAD : No abnormalities detected; + : Slight; ++ : Moderate

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus were examined microscopically.

Appendix 31-1-1 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined	Findings
0	007	NAD	a Kidney	: Basophilic tubules, unilateral +
				Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	008	NAD	a Lung	: Mineralization, artery +
			Kidney	: Basophilic tubules, unilateral +
				Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	009	NAD	a Kidney	: Hyaline droplet, proximal tubular epithelium +
			Prostate	: Cellular infiltration, lymphocyte, interstitium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	010	NAD	a Pancreas	: Cellular infiltration, lymphocyte, focal +
			Kidney	: Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	011	NAD	a Lung	: Mineralization, artery +
			Kidney	: Hyaline droplet, proximal tubular epithelium +
				Mineralization, cortex, unilateral +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +

NAD : No abnormalities detected; + : Slight

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 31-1-2 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
0 (Continued)	012	NAD	a Liver	: Microgranuloma +
			Kidney	: Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +

NAD : No abnormalities detected; + : Slight
a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 31-2 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
20	019	NAD	Not examined	
	020	NAD	Not examined	
	021	NAD	Not examined	
	022	NAD	Not examined	
	023	NAD	Not examined	
	024	NAD	Not examined	

NAD : No abnormalities detected

Appendix 31-3 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
60	031	NAD	Not examined	
	032	NAD	Not examined	
	033	NAD	Not examined	
	034	NAD	Not examined	
	035	NAD	Not examined	
	036	NAD	Not examined	

NAD : No abnormalities detected

Appendix 31-4-1 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined	Findings
200	043	NAD	a Lung	: Mineralization, artery +
			Kidney	: Basophilic tubules, unilateral+
				Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	044	NAD	a Liver	: Degeneration, fatty, hepatocyte, periportal +
			Pancreas	Deposit, brown pigment, macropharge +
			Kidney	: Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	045	NAD	a Kidney	: Cyst, solitary, unilateral +
				Basophilic tubules, unilateral+
				Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	046	NAD	a Pancreas	: Cellular infiltration, lymphocyte, focal +
			Kidney	: Eosinophilic body, proximal tubular epithelium +
				Hyaline droplet, proximal tubular epithelium +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +

NAD : No abnormalities detected; + : Slight

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 31-4-2 Individual pathological findings of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined		Findings
200 (Continued)	047	NAD	a Kidney	:	Cyst, solitary, unilateral +
					Hyaline droplet, proximal tubular epithelium +
			Parathyroid	:	Not in section
			Spleen	:	Hematopoiesis, extramedullary +
					Deposit, brown pigment +
	048	NAD	a Kidney	:	Hyaline droplet, proximal tubular epithelium +
			Spleen	:	Hematopoiesis, extramedullary +
					Deposit, brown pigment +

NAD : No abnormalities detected; + : Slight
a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, testis, epididymis, prostate and seminal vesicle were examined microscopically.

Appendix 32-1 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined	Findings
0	507	NAD	a Lung	: Mineralization, artery +
			Liver	: Microgranuloma +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	508	NAD	a Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	509	NAD	a Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	510	NAD	a Lung	: Mineralization, artery +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	511	NAD	a Liver	: Necrosis, focal +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	512	NAD	a Parathyroid	: Not in section
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +

NAD : No abnormalities detected; + : Slight
a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus were examined microscopically.

Appendix 32-2 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
20	519	NAD	Not examined	
	520	NAD	Not examined	
	521	NAD	Not examined	
	522	NAD	Not examined	
	523	NAD	Not examined	
	524	NAD	Not examined	

NAD : No abnormalities detected

Appendix 32-3 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology	
			Organs examined	Findings
60	531	NAD	Not examined	
	532	NAD	Not examined	
	533	NAD	Not examined	
	534	NAD	Not examined	
	535	NAD	Not examined	
	536	Lung : Dark red spots +	Lung	: Hemorrhage +

NAD : No abnormalities detected; + : Slight

Appendix 32-4 Individual pathological findings of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning
< 85 days of age>

Dose (mg/kg)	Animal Number	Necropsy Findings	Histology Organs examined	Findings
200	543	NAD	a Kidney	: Basophilic tubules, unilateral +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	544	NAD	a Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	545	NAD	a Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	546	NAD	a Lung	: Mineralization, artery +
			Pituitary	: Cyst, Rathke's pouch, anterior lobe +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	547	NAD	a Lung	: Mineralization, artery +
			Liver	: Microgranuloma +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +
	548	NAD	a Lung	: Mineralization, artery +
			Spleen	: Hematopoiesis, extramedullary +
				Deposit, brown pigment +

NAD : No abnormalities detected; + : Slight

a: Organs of brain, pituitary, thymus, thyroid, parathyroid, trachea, lung, heart, stomach, intestine, liver, pancreas, spleen, kidney, adrenal, lymph node, urinary bladder, spinal cord, bone marrow, sciatic nerve, ovary and uterus were examined microscopically.

Appendix 33 Individual absolute organ weights of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (mg)	Heart (mg)	Lung (mg)	Thymus (mg)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Testis (mg)	Prost.† (mg)	Epidid. (mg)
0	001	52.3	1.59	1.79	0.65	255	302	464	233	7.5	2.9	18.7	330	76.7	51.6
	002	54.3	1.55	1.72	0.69	204	343	444	220	7.8	3.1	23.2	311	97.6	58.4
	003	64.2	1.60	2.16	0.80	335	353	483	280	11.8	3.7	26.0	372	79.7	60.2
	004	49.7	1.47	1.58	0.55	150	251	408	253	9.3	2.8	19.3	277	75.8	55.9
	005	51.6	1.50	1.76	0.60	223	312	425	211	9.1	2.9	18.1	271	98.4	44.9
	006	58.1	1.51	2.00	0.64	232	323	468	276	8.7	3.1	26.1	360	92.8	57.3
	Mean	55.0	1.54	1.84	0.66	233	314	449	246	9.0	3.1	21.9	320	86.8	54.7
20	013	52.9	1.57	1.62	0.61	225	269	465	247	11.8	2.8	16.1	311	94.0	55.6
	014	52.8	1.46	1.71	0.62	203	283	438	214	10.8	2.5	26.2	279	68.8	43.5
	015	61.8	1.58	2.11	0.71	248	402	475	232	10.0	3.2	22.8	296	83.1	53.9
	016	55.8	1.58	1.92	0.67	222	337	429	228	9.6	3.3	28.5	349	98.1	65.1
	017	50.7	1.40	1.68	0.57	171	322	545	220	8.6	3.1	23.1	302	59.7	47.7
	018	58.3	1.49	1.88	0.69	252	262	456	254	11.2	3.1	16.8	311	79.4	43.8
	Mean	55.4	1.51	1.82	0.65	220	313	468	233	10.3	3.0	22.3	308	80.5	51.6
60	025	56.2	1.56	2.02	0.60	226	313	528	220	10.3	2.8	22.7	340	90.6	52.8
	026	51.6	1.51	1.79	0.62	152	316	428	253	10.7	3.0	17.5	279	69.0	39.5
	027	56.5	1.51	1.86	0.67	201	326	493	246	8.8	2.9	23.2	321	87.8	54.3
	028	53.1	1.54	1.89	0.64	167	314	436	196	10.1	2.9	20.4	316	96.8	54.3
	029	53.2	1.52	1.89	0.61	222	341	462	204	8.3	3.1	22.4	345	63.7	53.3
	030	57.8	1.58	2.02	0.66	198	346	482	263	9.4	3.4	21.1	353	83.8	67.5
	Mean	54.7	1.54	1.91	0.63	194	326	472	230	9.6	3.0	21.2	326	82.0	53.6
200	037	47.6	1.55	2.01	0.63	197	270	436	208	10.7	2.9	16.0	280	90.1	39.1
	038	40.6	1.41	1.65	0.52	125	249	329	180	7.9	2.7	16.5	218	71.0	51.9
	039	57.5	1.55	2.29	0.67	248	329	516	254	8.4	3.3	28.2	323	88.3	52.9
	040	47.2	1.47	1.88	0.59	130	295	360	176	8.6	2.7	18.6	264	56.1	47.7
	041	45.2	1.46	1.88	0.56	133	304	386	198	9.6	2.7	16.5	306	80.6	49.7
	042	49.7	1.46	2.04	0.65	171	292	370	206	8.8	2.9	24.3	297	75.5	53.2
	Mean	48.0	1.48	1.96	0.60	167	290	400	204	9.0	2.9	20.0	281	76.9	49.1

† : Total weights of the prostate and seminal vesicle

Appendix 34 Individual absolute organ weights of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (mg)	Heart (mg)	Lung (mg)	Thymus (mg)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Ovary (mg)	Uterus (mg)
0	501	52.8	1.50	1.80	0.59	180	333	455	215	8.4	3.0	21.1	12.7	43.1
	502	48.5	1.45	1.51	0.59	169	271	459	212	10.1	3.2	22.1	16.9	38.8
	503	56.2	1.43	1.77	0.71	215	298	501	204	9.7	3.5	26.1	16.4	41.3
	504	50.5	1.50	1.55	0.63	190	268	378	237	11.4	3.8	21.9	17.4	38.2
	505	48.0	1.54	1.55	0.61	127	296	420	222	8.7	3.3	22.7	17.0	30.6
	506	52.2	1.43	1.56	0.64	174	293	403	241	7.7	3.2	23.8	12.9	42.3
	Mean	51.4	1.48	1.62	0.63	176	293	436	222	9.3	3.3	23.0	15.6	39.1
20	513	53.6	1.53	1.80	0.64	170	346	438	201	8.5	3.1	21.4	16.2	41.9
	514	50.7	1.46	1.62	0.62	197	251	420	247	12.1	3.2	22.6	13.9	33.2
	515	55.6	1.50	1.73	0.69	206	331	454	304	9.3	3.2	21.6	16.0	53.9
	516	52.0	1.49	1.84	0.60	223	288	479	224	8.1	2.7	26.9	15.2	46.9
	517	46.1	1.47	1.52	0.53	159	272	389	195	7.8	2.9	21.9	16.4	28.8
	518	53.6	1.45	1.78	0.67	228	311	408	231	10.6	3.2	25.2	17.4	31.5
	Mean	51.9	1.48	1.72	0.63	197	300	431	234	9.4	3.1	23.3	15.9	39.4
60	525	51.9	1.47	1.77	0.66	204	300	431	202	9.1	3.2	27.4	15.2	39.4
	526	48.7	1.43	1.74	0.57	167	263	408	210	9.3	3.1	23.4	16.6	40.4
	527	57.6	1.45	1.95	0.74	204	320	466	261	11.0	3.4	26.8	18.9	46.0
	528	51.8	1.45	1.77	0.60	195	271	426	207	10.0	2.9	29.0	15.0	45.2
	529	48.8	1.42	1.73	0.60	172	290	402	232	10.1	3.3	20.6	13.9	39.1
	530	53.6	1.49	1.75	0.64	215	280	429	237	10.9	3.6	17.9	13.0	44.5
	Mean	52.1	1.45	1.79	0.64	193	287	427	225	10.1	3.3	24.2	15.4	42.4
200	537	40.4	1.30	1.58	0.51	162	259	381	165	7.9	2.5	15.4	20.7	42.1
	538	44.6	1.46	1.73	0.58	147	294	384	182	7.9	3.1	18.3	11.9	42.1
	539	47.8	1.42	1.79	0.62	142	273	412	257	9.6	2.8	23.3	15.0	45.3
	540	44.4	1.45	1.72	0.53	164	252	390	167	8.6	2.8	20.0	10.7	42.7
	541	42.7	1.45	1.55	0.54	184	249	370	199	8.6	2.5	20.2	14.7	32.1
	542	45.7	1.32	1.78	0.61	137	252	399	188	10.4	2.8	19.1	14.1	34.0
	Mean	44.3	1.40	1.69	0.57	156	263	389	193	8.8	2.8	19.4	14.5	39.7

Appendix 35 Individual relative organ weights of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (%)	Liver (%)	Kidney (%)	Spleen (mg%)	Heart (mg%)	Lung (mg%)	Thymus (mg%)	Thyr. (mg%)	Pitui. (mg%)	Adrenal (mg%)	Testis (mg%)	Prost.† (mg%)	Epidid. (mg%)
0	001	52.3	3.04	3.42	1.24	488	577	887	446	14.3	5.5	35.8	631	146.7	98.7
	002	54.3	2.85	3.17	1.27	376	632	818	405	14.4	5.7	42.7	573	179.7	107.6
	003	64.2	2.49	3.36	1.25	522	550	752	436	18.4	5.8	40.5	579	124.1	93.8
	004	49.7	2.96	3.18	1.11	302	505	821	509	18.7	5.6	38.8	557	152.5	112.5
	005	51.6	2.91	3.41	1.16	432	605	824	409	17.6	5.6	35.1	525	190.7	87.0
	006	58.1	2.60	3.44	1.10	399	556	806	475	15.0	5.3	44.9	620	159.7	98.6
	Mean	55.0	2.81	3.33	1.19	420	571	818	447	16.4	5.6	39.6	581	158.9	99.7
20	013	52.9	2.97	3.06	1.15	425	509	879	467	22.3	5.3	30.4	588	177.7	105.1
	014	52.8	2.77	3.24	1.17	384	536	830	405	20.5	4.7	49.6	528	130.3	82.4
	015	61.8	2.56	3.41	1.15	401	650	769	375	16.2	5.2	36.9	479	134.5	87.2
	016	55.8	2.83	3.44	1.20	398	604	769	409	17.2	5.9	51.1	625	175.8	116.7
	017	50.7	2.76	3.31	1.12	337	635	1075	434	17.0	6.1	45.6	596	117.8	94.1
	018	58.3	2.56	3.22	1.18	432	449	782	436	19.2	5.3	28.8	533	136.2	75.1
	Mean	55.4	2.74	3.28	1.16	369	564	851	421	18.7	5.4	40.4	558	145.4	93.4
60	025	56.2	2.78	3.59	1.07	402	557	940	391	18.3	5.0	40.4	605	161.2	94.0
	026	51.6	2.93	3.47	1.20	295	612	829	490	20.7	5.8	33.9	541	133.7	76.6
	027	56.5	2.67	3.29	1.19	356	577	873	435	15.6	5.1	41.1	568	155.4	96.1
	028	53.1	2.90	3.56	1.21	315	591	821	369	19.0	5.5	38.4	595	182.3	102.3
	029	53.2	2.86	3.55	1.15	417	641	868	383	15.6	5.8	42.1	648	119.7	100.2
	030	57.8	2.73	3.49	1.14	343	599	834	455	16.3	5.9	36.5	611	145.0	116.8
	Mean	54.7	2.81	3.49	1.16	355	596	861	421	17.6	5.5	38.7	595	149.6	97.7
200	037	47.6	3.26	4.22	1.32	414	567	916	437	22.5	6.1	33.6	588	189.3	82.1
	038	40.6	3.47	4.06	1.28	308	613	810	443	19.5	6.7	40.6	537	174.9	127.8
	039	57.5	2.70	3.98	1.17	431	572	897	442	14.6	5.7	49.0	562	153.6	92.0
	040	47.2	3.11	3.98	1.25	275	625	763	373	18.2	5.7	39.4	559	118.9	101.1
	041	45.2	3.23	4.16	1.24	294	673	854	438	21.2	6.0	36.5	677	178.3	110.0
	042	49.7	2.94	4.10	1.31	344	588	744	414	17.7	5.8	48.9	598	151.9	107.0
	Mean	48.0	3.12	4.08	1.26	344	606	831	425	19.0	6.0	41.3	587	161.2	103.3

†: Total weights of the prostate and seminal vesicle

Appendix 36 Individual relative organ weights of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <22 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (%)	Liver (%)	Kidney (%)	Spleen (mg%)	Heart (mg%)	Lung (mg%)	Thymus (mg%)	Thyr. (mg%)	Pitui. (mg%)	Adrenal (mg%)	Ovary (mg%)	Uterus (mg%)
0	501	52.8	2.84	3.41	1.12	341	631	862	407	15.9	5.7	40.0	24.1	81.6
	502	48.5	2.99	3.11	1.22	348	559	946	437	20.8	6.6	45.6	34.8	80.0
	503	56.2	2.54	3.15	1.26	383	530	891	363	17.3	6.2	46.4	29.2	73.5
	504	50.5	2.97	3.07	1.25	376	531	749	469	22.6	7.5	43.4	34.5	75.6
	505	48.0	3.21	3.23	1.27	265	617	875	463	18.1	6.9	47.3	35.4	63.8
	506	52.2	2.74	2.99	1.23	333	561	772	462	14.8	6.1	45.6	24.7	81.0
	Mean	51.4	2.88	3.16	1.23	341	572	849	434	18.3	6.5	44.7	30.5	75.9
20	513	53.6	2.85	3.36	1.19	317	646	817	375	15.9	5.8	39.9	30.2	78.2
	514	50.7	2.88	3.20	1.22	389	495	828	487	23.9	6.3	44.6	27.4	65.5
	515	55.6	2.70	3.11	1.24	371	595	817	547	16.7	5.8	38.8	28.8	96.9
	516	52.0	2.87	3.54	1.15	429	554	921	431	15.6	5.2	51.7	29.2	90.2
	517	46.1	3.19	3.30	1.15	345	590	844	423	16.9	6.3	47.5	35.6	62.5
	518	53.6	2.71	3.32	1.25	425	580	761	431	19.8	6.0	47.0	32.5	58.8
	Mean	51.9	2.87	3.31	1.20	379	577	831	449	18.1	5.9	44.9	30.6	75.4
60	525	51.9	2.83	3.41	1.27	393	578	830	389	17.5	6.2	52.8	29.3	75.9
	526	48.7	2.94	3.57	1.17	343	540	838	431	19.1	6.4	48.0	34.1	83.0
	527	57.6	2.52	3.39	1.28	354	556	809	453	19.1	5.9	46.5	32.8	79.9
	528	51.8	2.80	3.42	1.16	376	523	822	400	19.3	5.6	56.0	29.0	87.3
	529	48.8	2.91	3.55	1.23	352	594	824	475	20.7	6.8	42.2	28.5	80.1
	530	53.6	2.78	3.26	1.19	401	522	800	442	20.3	6.7	33.4	24.3	83.0
	Mean	52.1	2.80	3.43	1.22	370	552	821	432	19.3	6.3	46.5	29.7	81.5
200	537	40.4	3.22	3.91	1.26	401	641	943	408	19.6	6.2	38.1	51.2	104.2
	538	44.6	3.27	3.88	1.30	330	659	861	408	17.7	7.0	41.0	26.7	94.4
	539	47.8	2.97	3.74	1.30	297	571	862	538	20.1	5.9	48.7	31.4	94.8
	540	44.4	3.27	3.87	1.19	369	568	878	376	19.4	6.3	45.0	24.1	96.2
	541	42.7	3.40	3.63	1.26	431	583	867	466	20.1	5.9	47.3	34.4	75.2
	542	45.7	2.89	3.89	1.33	300	551	873	411	22.8	6.1	41.8	30.9	74.4
	Mean	44.3	3.17	3.82	1.27	355	596	881	435	20.0	6.2	43.7	33.1	89.9

Appendix 37 Individual absolute organ weights of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (g)	Heart (g)	Lung (g)	Thymus (g)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Testis (g)	Prost. (g)	Semi.v (g)	Epidid. (g)
0	007	397	2.03	11.92	2.57	0.74	1.29	1.32	0.45	26.2	12.6	69.1	3.09	0.43	1.28	1.01
	008	455	2.07	13.30	3.11	0.86	1.37	1.41	0.40	32.1	15.1	58.1	3.51	0.62	1.47	1.21
	009	418	2.11	13.49	2.80	0.88	1.34	1.36	0.43	31.6	14.0	61.4	3.02	0.31	1.77	1.21
	010	388	2.04	11.07	2.38	0.76	1.08	1.20	0.44	28.0	12.0	65.5	3.43	0.58	1.57	1.01
	011	425	2.10	11.76	3.09	0.97	1.19	1.36	0.51	31.0	12.7	60.7	3.41	0.54	1.68	1.21
	012	449	2.20	13.25	3.31	0.92	1.47	1.44	0.55	29.9	15.6	57.1	3.48	0.57	1.94	1.25
	Mean	422	2.09	12.47	2.88	0.86	1.29	1.35	0.46	29.8	13.7	62.0	3.32	0.51	1.62	1.15
20	019	529	2.02	15.67	3.12	1.08	1.42	1.72	0.57	31.6	14.5	74.1	3.51	0.71	1.79	1.26
	020	479	2.07	14.46	3.03	1.06	1.50	1.52	0.55	31.1	15.2	68.8	3.51	0.54	1.97	1.26
	021	466	2.04	14.62	3.12	1.01	1.36	1.22	0.65	29.5	13.9	71.1	3.13	0.71	1.88	1.06
	022	488	2.10	14.37	2.92	0.80	1.36	1.46	0.55	34.2	11.9	77.5	3.42	0.47	1.90	1.28
	023	449	2.10	14.08	2.73	0.80	1.32	1.54	0.54	27.8	13.1	67.5	3.28	0.49	1.81	1.20
	024	449	1.86	12.27	2.81	0.75	1.35	1.51	0.47	25.4	12.1	61.3	2.80	0.56	1.46	0.98
	Mean	477	2.03	14.25	2.96	0.92	1.39	1.50	0.56	29.9	13.5	70.1	3.28	0.58	1.80	1.17
60	031	455	2.13	12.79	2.65	1.03	1.50	1.66	0.57	23.5	12.8	69.1	3.60	0.68	1.53	1.23
	032	438	2.05	12.47	2.95	0.98	1.31	1.35	0.50	23.6	14.4	55.6	3.38	0.57	1.88	1.19
	033	442	2.00	13.32	2.68	0.81	1.51	1.33	0.41	25.6	14.0	63.2	2.98	0.50	1.75	1.17
	034	458	2.04	13.00	2.94	0.98	1.37	1.36	0.55	32.7	12.9	64.1	3.68	0.64	1.64	1.15
	035	492	2.17	15.83	2.99	0.94	1.63	1.55	0.46	27.1	14.3	75.1	3.62	0.57	1.64	1.30
	036	440	2.07	12.22	2.85	0.95	1.33	1.38	0.42	30.9	13.4	62.7	3.74	0.76	1.87	1.24
	Mean	454	2.08	13.27	2.84	0.95	1.44	1.44	0.49	27.2	13.6	65.0	3.50	0.62	1.72	1.21
200	043	444	1.88	12.56	2.57	0.84	1.30	1.25	0.50	33.3	12.6	58.1	3.01	0.76	1.73	1.08
	044	497	2.05	14.04	2.74	0.81	1.45	1.43	0.45	32.6	15.5	107.7	3.08	0.69	1.91	1.23
	045	410	2.00	11.36	2.68	0.82	1.27	1.31	0.57	25.0	11.8	53.0	2.80	0.51	1.71	1.14
	046	435	2.05	14.23	3.07	0.90	1.37	1.34	0.43	32.7	14.1	66.7	3.01	0.61	1.90	1.05
	047	430	2.06	13.45	2.98	0.98	1.43	1.39	0.51	29.2	13.2	58.3	3.58	0.66	1.61	1.27
	048	460	2.07	15.49	2.91	0.92	1.51	1.37	0.46	28.2	16.9	59.3	3.00	0.47	1.93	1.16
	Mean	446	2.02	13.52	2.83	0.88	1.39	1.35	0.49	30.2	14.0	67.2	3.08	0.62	1.80	1.16

Appendix 38 Individual absolute organ weights of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (g)	Liver (g)	Kidney (g)	Spleen (g)	Heart (g)	Lung (g)	Thymus (g)	Thyr. (mg)	Pitui. (mg)	Adrenal (mg)	Ovary (mg)	Uterus (g)
0	507	231	1.80	6.02	1.60	0.42	0.79	0.91	0.38	27.1	11.9	54.4	66.4	0.43
	508	241	1.87	6.98	1.79	0.61	0.83	1.08	0.37	27.0	21.2	73.9	68.5	0.58
	509	229	2.05	6.29	1.84	0.62	0.85	1.08	0.31	25.5	12.1	62.8	101.5	0.53
	510	249	1.92	7.20	1.81	0.58	0.87	1.00	0.33	27.3	12.9	56.8	98.1	0.53
	511	253	1.94	6.71	1.80	0.54	0.88	1.06	0.43	26.5	14.0	75.4	71.5	0.49
	512	249	1.99	6.17	1.95	0.58	0.84	1.08	0.34	21.2	16.7	72.6	84.3	1.40
	Mean	242	1.93	6.56	1.80	0.56	0.84	1.04	0.36	25.8	14.8	66.0	81.7	0.66
20	519	249	1.86	6.62	1.76	0.49	0.84	0.96	0.39	21.7	13.8	64.7	84.7	0.35
	520	205	1.88	5.41	1.49	0.43	0.78	0.98	0.30	24.4	11.4	61.0	79.9	0.53
	521	260	1.97	7.74	1.90	0.54	0.92	0.99	0.39	25.8	16.2	65.7	89.1	0.49
	522	240	1.99	6.40	1.82	0.56	0.86	0.98	0.33	22.5	15.1	56.9	69.5	0.47
	523	241	1.84	6.17	1.72	0.56	0.89	1.06	0.33	21.3	15.4	69.3	74.5	0.95
	524	244	1.91	6.56	1.90	0.48	0.85	1.02	0.30	26.0	14.3	74.4	69.9	1.00
	Mean	240	1.91	6.48	1.77	0.51	0.86	1.00	0.34	23.6	14.4	65.3	77.9	0.63
60	531	258	1.93	6.88	1.65	0.62	0.88	1.13	0.45	27.6	17.1	65.6	104.0	0.43
	532	257	1.99	7.86	1.80	0.67	0.95	1.04	0.49	27.9	17.9	63.5	93.9	0.72
	533	259	1.93	7.13	1.79	0.55	0.83	1.08	0.43	25.9	17.7	77.0	77.1	0.46
	534	259	1.95	6.97	1.75	0.64	0.92	1.17	0.36	21.0	18.1	78.6	108.2	0.50
	535	228	1.88	6.24	1.61	0.51	0.84	0.95	0.37	19.6	15.5	69.9	78.4	0.40
	536	243	1.82	6.61	1.87	0.51	0.77	0.96	0.38	25.6	15.9	59.0	60.6	0.82
	Mean	251	1.92	6.95	1.75	0.58	0.87	1.06	0.41	24.6	17.0	68.9	87.0	0.56
200	543	243	1.86	6.60	1.74	0.50	0.82	1.04	0.48	22.4	15.0	62.3	59.5	1.22
	544	245	1.80	6.71	1.78	0.60	0.83	1.09	0.43	21.6	12.8	65.4	79.4	0.43
	545	241	1.78	6.83	1.65	0.54	0.89	1.16	0.56	23.9	15.4	71.5	84.4	0.63
	546	257	1.87	6.90	1.89	0.51	0.84	1.03	0.36	25.7	17.1	77.1	74.8	0.98
	547	238	1.88	6.63	1.78	0.55	0.84	0.95	0.30	26.3	14.2	69.7	63.6	0.48
	548	202	1.83	5.56	1.69	0.51	0.74	0.95	0.32	21.6	12.3	55.5	88.0	0.39
	Mean	238	1.84	6.54	1.76	0.54	0.83	1.04	0.41	23.6	14.5	66.9	75.0	0.69

Appendix 39 Individual relative organ weights of male rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (%)	Liver (%)	Kidney (%)	Spleen (%)	Heart (%)	Lung (%)	Thymus (%)	Thyr. (mg%)	Pitui. (mg%)	Adrenal (mg%)	Testis (mg%)	Prost. (%)	Semi.v (%)	Epidid. (%)
0	007	397	0.51	3.00	0.65	0.19	0.32	0.33	0.11	6.6	3.2	17.4	0.78	0.11	0.32	0.25
	008	455	0.45	2.92	0.68	0.19	0.30	0.31	0.09	7.1	3.3	12.8	0.77	0.14	0.32	0.27
	009	418	0.50	3.23	0.67	0.21	0.32	0.33	0.10	7.6	3.3	14.7	0.72	0.07	0.42	0.29
	010	388	0.53	2.85	0.61	0.20	0.28	0.31	0.11	7.2	3.1	16.9	0.88	0.15	0.40	0.26
	011	425	0.49	2.77	0.73	0.23	0.28	0.32	0.12	7.3	3.0	14.3	0.80	0.13	0.40	0.28
	012	449	0.49	2.95	0.74	0.20	0.33	0.32	0.12	6.7	3.5	12.7	0.78	0.13	0.43	0.28
	Mean	422	0.50	2.95	0.68	0.20	0.31	0.32	0.11	7.1	3.2	14.8	0.79	0.12	0.38	0.27
20	019	529	0.38	2.96	0.59	0.20	0.27	0.33	0.11	6.0	2.7	14.0	0.66	0.13	0.34	0.24
	020	479	0.43	3.02	0.63	0.22	0.31	0.32	0.11	6.5	3.2	14.4	0.73	0.11	0.41	0.26
	021	466	0.44	3.14	0.67	0.22	0.29	0.26	0.14	6.3	3.0	15.3	0.67	0.15	0.40	0.23
	022	488	0.43	2.94	0.60	0.16	0.28	0.30	0.11	7.0	2.4	15.9	0.70	0.10	0.39	0.26
	023	449	0.47	3.14	0.61	0.18	0.29	0.34	0.12	6.2	2.9	15.0	0.73	0.11	0.40	0.27
	024	449	0.41	2.73	0.63	0.17	0.30	0.34	0.10	5.7	2.7	13.7	0.62	0.12	0.33	0.22
	Mean	477	0.43	2.99	0.62	0.19	0.29	0.32	0.12	6.3	2.8	14.7	0.69	0.12	0.38	0.25
60	031	455	0.47	2.81	0.58	0.23	0.33	0.36	0.13	5.2	2.8	15.2	0.79	0.15	0.34	0.27
	032	438	0.47	2.85	0.67	0.22	0.30	0.31	0.11	5.4	3.3	12.7	0.77	0.13	0.43	0.27
	033	442	0.45	3.01	0.61	0.18	0.34	0.30	0.09	5.8	3.2	14.3	0.67	0.11	0.40	0.26
	034	458	0.45	2.84	0.64	0.21	0.30	0.30	0.12	7.1	2.8	14.0	0.80	0.14	0.36	0.25
	035	492	0.44	3.22	0.61	0.19	0.33	0.32	0.09	5.5	2.9	15.3	0.74	0.12	0.33	0.26
	036	440	0.47	2.78	0.65	0.22	0.30	0.31	0.10	7.0	3.0	14.3	0.85	0.17	0.43	0.28
	Mean	454	0.46	2.92	0.63	0.21	0.32	0.32	0.11	6.0	3.0	14.3	0.77	0.14	0.38	0.27
200	043	444	0.42	2.83	0.58	0.19	0.29	0.28	0.11	7.5	2.8	13.1	0.68	0.17	0.39	0.24
	044	497	0.41	2.82	0.55	0.16	0.29	0.29	0.09	6.6	3.1	21.7	0.62	0.14	0.38	0.25
	045	410	0.49	2.77	0.65	0.20	0.31	0.32	0.14	6.1	2.9	12.9	0.68	0.12	0.42	0.28
	046	435	0.47	3.27	0.71	0.21	0.31	0.31	0.10	7.5	3.2	15.3	0.69	0.14	0.44	0.24
	047	430	0.48	3.13	0.69	0.23	0.33	0.32	0.12	6.8	3.1	13.6	0.83	0.15	0.37	0.30
	048	460	0.45	3.37	0.63	0.20	0.33	0.30	0.10	6.1	3.7	12.9	0.65	0.10	0.42	0.25
	Mean	446	0.45	3.03	0.64	0.20	0.31	0.30	0.11	6.8	3.1	14.9	0.69	0.14	0.40	0.26

Appendix 40 Individual relative organ weights of female rats treated orally with 2-tert-buthylphenol during 18 days from 4 days of age to weaning <85 days of age>

Dose (mg/kg)	Animal numbers	B.W. (g)	Brain (%)	Liver (%)	Kidney (%)	Spleen (%)	Heart (%)	Lung (%)	Thymus (%)	Thyr. (mg%)	Pitui. (mg%)	Adrenal (mg%)	Ovary (mg%)	Uterus (%)
0	507	231	0.78	2.61	0.69	0.18	0.34	0.39	0.16	11.7	5.2	23.5	28.7	0.19
	508	241	0.78	2.90	0.74	0.25	0.34	0.45	0.15	11.2	8.8	30.7	28.4	0.24
	509	229	0.90	2.75	0.80	0.27	0.37	0.47	0.14	11.1	5.3	27.4	44.3	0.23
	510	249	0.77	2.89	0.73	0.23	0.35	0.40	0.13	11.0	5.2	22.8	39.4	0.21
	511	253	0.77	2.65	0.71	0.21	0.35	0.42	0.17	10.5	5.5	29.8	28.3	0.19
	512	249	0.80	2.48	0.78	0.23	0.34	0.43	0.14	8.5	6.7	29.2	33.9	0.56
	Mean	242	0.80	2.71	0.74	0.23	0.35	0.43	0.15	10.7	6.1	27.2	33.8	0.27
20	519	249	0.75	2.66	0.71	0.20	0.34	0.39	0.16	8.7	5.5	26.0	34.0	0.14
	520	205	0.92	2.64	0.73	0.21	0.38	0.48	0.15	11.9	5.6	29.8	39.0	0.26
	521	260	0.76	2.98	0.73	0.21	0.35	0.38	0.15	9.9	6.2	25.3	34.3	0.19
	522	240	0.83	2.67	0.76	0.23	0.36	0.41	0.14	9.4	6.3	23.7	29.0	0.20
	523	241	0.76	2.56	0.71	0.23	0.37	0.44	0.14	8.8	6.4	28.8	30.9	0.39
	524	244	0.78	2.69	0.78	0.20	0.35	0.42	0.12	10.7	5.9	30.5	28.6	0.41
	Mean	240	0.80	2.70	0.74	0.21	0.36	0.42	0.14	9.9	6.0	27.4	32.6	0.27
60	531	258	0.75	2.67	0.64	0.24	0.34	0.44	0.17	10.7	6.6	25.4	40.3	0.17
	532	257	0.77	3.06	0.70	0.26	0.37	0.40	0.19	10.9	7.0	24.7	36.5	0.28
	533	259	0.75	2.75	0.69	0.21	0.32	0.42	0.17	10.0	6.8	29.7	29.8	0.18
	534	259	0.75	2.69	0.68	0.25	0.36	0.45	0.14	8.1	7.0	30.3	41.8	0.19
	535	228	0.82	2.74	0.71	0.22	0.37	0.42	0.16	8.6	6.8	30.7	34.4	0.18
	536	243	0.75	2.72	0.77	0.21	0.32	0.40	0.16	10.5	6.5	24.3	24.9	0.34
	Mean	251	0.77	2.77	0.70	0.23	0.35	0.42	0.17	9.8	6.8	27.5	34.6	0.22
200	543	243	0.77	2.72	0.72	0.21	0.34	0.43	0.20	9.2	6.2	25.6	24.5	0.50
	544	245	0.73	2.74	0.73	0.24	0.34	0.44	0.18	8.8	5.2	26.7	32.4	0.18
	545	241	0.74	2.83	0.68	0.22	0.37	0.48	0.23	9.9	6.4	29.7	35.0	0.26
	546	257	0.73	2.68	0.74	0.20	0.33	0.40	0.14	10.0	6.7	30.0	29.1	0.38
	547	238	0.79	2.79	0.75	0.23	0.35	0.40	0.13	11.1	6.0	29.3	26.7	0.20
	548	202	0.91	2.75	0.84	0.25	0.37	0.47	0.16	10.7	6.1	27.5	43.6	0.19
	Mean	238	0.78	2.75	0.74	0.23	0.35	0.44	0.17	10.0	6.1	28.1	31.9	0.29

Appendix 41 Individual body weights of foster mother rats that reared pups treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Animal number	Days of age 4	10	16	21	Gain 4-21
601	312	332	336	324	12
602	320	355	357	357	37
603	347	400	392	372	25
604	315	332	346	307	-8
605	336	347	335	338	2
606	320	355	358	333	13
607	323	346	333	314	-9
608	283	307	309	308	25
609	283	305	315	312	29
610	359	368	369	341	-18
611	304	353	371	353	49
612	310	317	321	311	1
Mean	318	343	345	331	13

Appendix 42 Individual food consumption of foster mother rats that reared pups treated orally with 2-tert-butylphenol during 18 days from 4 days of age to weaning

(g)

Animal number	Days of age 7	13	19
601	55	65	74
602	64	65	84
603	62	74	101
604	54	60	75
605	52	66	79
606	63	67	82
607	56	68	71
608	52	63	71
609	50	62	71
610	65	74	81
611	54	70	84
612	50	57	72
Mean	56	66	79

Appendix 43 Historical baseline data of the Crj:CD(SD)IGS strain male rats on the hematological and biochemical parameters

Parameters	22 days of age		85 days of age	
	Mean	Normal range[a)]	Mean	Normal range[a)]
Hematological parameters				
Erythrocyte count ($10^4/\mu L$)	513(69)	443 ~ 583	849(103)	785 ~ 913
Hemoglobin concentration (g/dL)	10.2(69)	8.3 ~ 12.1	15.9(106)	14.6 ~ 17.2
Hematocrit value (%)	32.7(69)	27.7 ~ 37.8	45.3(106)	42.2 ~ 48.4
Mean corpuscular volume (pg)	64(69)	58 ~ 70	53(106)	50 ~ 56
Mean corpuscular hemoglobin (fL)	19.9(69)	17.6 ~ 22.2	18.7(106)	17.5 ~ 19.8
Mean corpuscular hemoglobin concentration (%)	31.2(69)	29.4 ~ 33.0	35.1(106)	33.7 ~ 36.5
Reticulocyte count (‰)	223(69)	171 ~ 274	26(103)	16 ~ 36
Prothrombin time (sec)	13.6(56)	12.6 ~ 14.5	13.0(106)	12.2 ~ 13.9
Activated partialthromboplastin time (sec)	14.7(60)	12.8 ~ 16.5	18.2(106)	15.9 ~ 20.5
Total leukocyte count ($10^2/\mu L$)	24(69)	10 ~ 53*	77(104)	42 ~ 112
Platelet count ($10^4/\mu L$)	157(67)	127 ~ 187	127(106)	104 ~ 150
Biochemical parameters				
Lactate dehydrogenase (IU/L)*	482(53)	241 ~ 965*	345(59)	174 ~ 678*
Glutamic oxaloacetic transaminase (IU/L)	118(53)	91 ~ 144	78(60)	58 ~ 98
Glutamic pyruvic transaminase (IU/L)	32(53)	17 ~ 47	39(59)	23 ~ 54
Alkaline phosphatase (IU/L)*	978(53)	673 ~ 1282	479(60)	226 ~ 731
γ-Glutamyl transpeptidase (IU/L)*	0.85(48)	0.24 ~ 1.46	0.67(60)	0.16 ~ 1.19
Cholinesterase (IU/L)	90(33)	63 ~ 127	47(48)	22 ~ 73
Total protein (g/dL)	4.74(53)	4.18 ~ 5.30	6.32(56)	5.65 ~ 7.00
Albumin (g/dL)	2.96(53)	2.59 ~ 3.32	3.22(60)	2.73 ~ 3.71
A/G ratio	1.67(53)	1.32 ~ 2.02	1.05(60)	0.83 ~ 1.26
Total cholesterol (mg/dL)	82(53)	57 ~ 116*	73(60)	41 ~ 105
Triglyceride (mg/dL)*	40(53)	16 ~ 95*	71(60)	16 ~ 127
Phospholipid(mg/dL)	122(48)	93 ~ 160*	117(59)	69 ~ 164
Glucose (mg/dL)	113(53)	72 ~ 155	143(60)	101 ~ 184
Total bilirubin (mg/dL)	0.40(53)	0.30 ~ 0.49	0.29(58)	0.23 ~ 0.35
Urea nitrogen (mg/dL)*	12.3(53)	1.9 ~ 22.7	15.2(60)	10.3 ~ 20.1
Creatinine (mg/dL)	0.42(53)	0.29 ~ 0.55	0.58(59)	0.47 ~ 0.69
Calcium (mg/dL)	9.8(53)	9.0 ~ 10.6	10.0(53)	9.2 ~ 10.7
Inorganic phosphorus (mg/dL)	9.1(53)	8.0 ~ 10.1	7.1(56)	5.9 ~ 8.4
Sodium (mEq/L)	143(46)	135 ~ 150*	144(60)	138 ~ 149
Potassium (mEq/L)	6.80(52)	5.42 ~ 8.19	4.83(60)	4.10 ~ 5.56
Chloride (mEq/L)	106(49)	101 ~ 112	104(60)	99 ~ 109

a) : (mean−2S.D.) ~ (mean+2S.D.)
( ) : Number of animals
* : Calculated from log-transformed data

Appendix 44 Historical baseline data of the Crj:CD(SD)IGS strain female rats on the hematological and biochemical parameters

Parameters	22 days of age		85 days of age	
	Mean	Normal range[a)]	Mean	Normal range[a)]
Hematological parameters				
Erythrocyte count ($10^4/\mu L$)	532(65)	455 ~ 608	806(102)	760 ~ 852
Hemoglobin concentration (g/dL)	10.6(66)	8.6 ~ 12.7	15.3(104)	14.2 ~ 14.4
Hematocrit value (%)	33.7(66)	28.2 ~ 39.3	43.4(104)	40.8 ~ 46.0
Mean corpuscular volume (pg)	63(66)	57 ~ 69	54(105)	51 ~ 56
Mean corpuscular hemoglobin (fL)	19.9(66)	17.7 ~ 22.1	19.0(106)	17.7 ~ 20.3
Mean corpuscular hemoglobin concentration (%)	31.5(64)	30.2 ~ 32.8	35.3(106)	34.0 ~ 36.6
Reticulocyte count (‰)	207(66)	151 ~ 262	22(104)	12 ~ 33
Prothrombin time (sec)	13.4(54)	12.3 ~ 14.5	13.4(102)	12.2 ~ 14.7
Activated partialthromboplastin time (sec)	14.1(60)	12.0 ~ 16.2	15.7(98)	14.1 ~ 18.0
Total leukocyte count ($10^2/\mu L$)	24(66)	13 ~ 47*	45(104)	19 ~ 72
Platelet count ($10^4/\mu L$)	153(66)	112 ~ 195	131(105)	101 ~ 161
Biochemical parameters				
Lactate dehydrogenase (IU/L)*	471(53)	236 ~ 938*	346(55)	190 ~ 627*
Glutamic oxaloacetic transaminase (IU/L)	118(53)	94 ~ 148*	76(57)	56 ~ 104*
Glutamic pyruvic transaminase (IU/L)	27(53)	15 ~ 46*	33(55)	22 ~ 47*
Alkaline phosphatase (IU/L)*	958(53)	661 ~ 1388*	335(58)	164 ~ 507
γ-Glutamyl transpeptidase (IU/L)*	0.93(48)	0.36 ~ 1.50	1.63(58)	0.63 ~ 2.64
Cholinesterase (IU/L)	89(32)	67 ~ 118	441(58)	148 ~ 734
Total protein (g/dL)	4.87(53)	4.39 ~ 5.36	6.40(58)	5.78 ~ 7.02
Albumin (g/dL)	3.08(53)	2.72 ~ 3.43	3.57(58)	3.15 ~ 3.98
A/G ratio	1.73(53)	1.36 ~ 2.09	1.25(58)	1.00 ~ 1.50
Total cholesterol (mg/dL)	86(53)	47 ~ 125	85(58)	58 ~ 111
Triglyceride (mg/dL)*	38(53)	15 ~ 95*	24(58)	10 ~ 56*
Phospholipid(mg/dL)	120(48)	79 ~ 154	141(58)	108 ~ 173
Glucose (mg/dL)	117(53)	79 ~ 154	134(58)	108 ~ 160
Total bilirubin (mg/dL)	0.38(53)	0.30 ~ 0.46	0.29(58)	0.23 ~ 0.35
Urea nitrogen (mg/dL)*	13.4(53)	4.1 ~ 22.8	15.0(57)	10.5 ~ 20.3
Creatinine (mg/dL)	0.41(52)	0.29 ~ 0.53	0.61(55)	0.52 ~ 0.70
Calcium (mg/dL)	10.0(53)	9.4 ~ 10.6	10.0(58)	9.3 ~ 10.7
Inorganic phosphorus (mg/dL)	9.5(53)	8.4 ~ 10.6	6.7(58)	5.3 ~ 8.1
Sodium (mEq/L)	141(47)	136 ~ 147	144(58)	141 ~ 147
Potassium (mEq/L)	6.98(52)	5.67 ~ 8.29	4.61(58)	4.04 ~ 5.19
Chloride (mEq/L)	106(52)	99 ~ 112	104(58)	101 ~ 107

a) : (mean−2S.D.) ~ (mean+2S.D.)
( ) : Number of animals
* : Calculated from log-transformed data