

Supplemental materials for:

Current Assessment of the Effects of Environmental Chemicals on the Mammary Gland in
Guideline EPA, OECD, and NTP Rodent Studies

Susan L. Makris

This file contains figures illustrating various study designs:

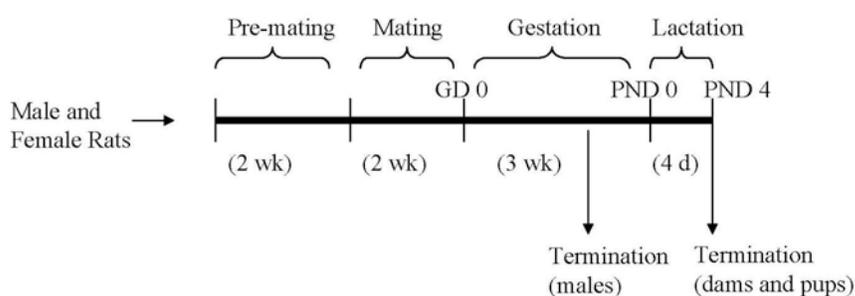
Figure 1. Studies that include assessments of reproductive function and postnatal outcome

Figure 2. Mammalian *in vivo* endocrine assays

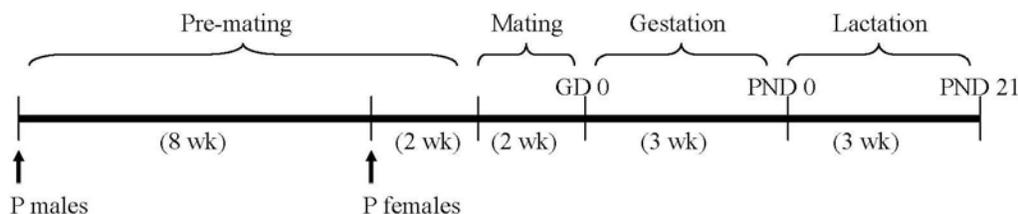
Figure 3. Subacute, subchronic, and chronic/carcinogenicity studies in rodents

Figure 1. Studies that include assessments of reproductive function and postnatal outcome
 Timelines for study conduct are presented for the reproduction/developmental toxicity screening test (OCED 1995, 1996; U.S. EPA 2000a, b), the one-generation reproduction study (OECD 1983), the two-generation reproduction study (OECD 2001, U.S. EPA 1998a), the developmental neurotoxicity (DNT) study (OECD 2007a, U.S. EPA 1998b), and the draft extended one-generation reproduction study (OECD 2010; source of diagram). In each study except the DNT, treatment is continuous from study initiation through termination. A study illustration for the NTP reproduction assessment by continuous breeding (RACB) study is not presented here, but can be found in Chapin and Sloane, 1996. Key: GD = gestation day; PND = postnatal day; P = parental (first) generation; F1 = first filial (second) generation; M = male; F = female

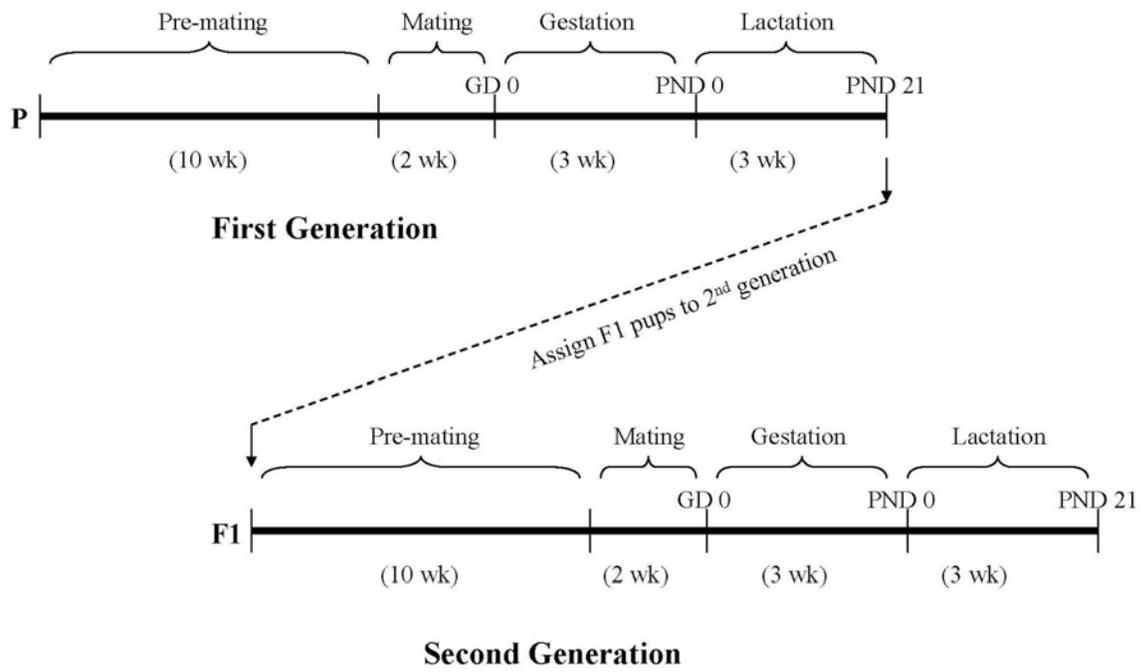
Reproduction/Developmental Toxicity Screening Test



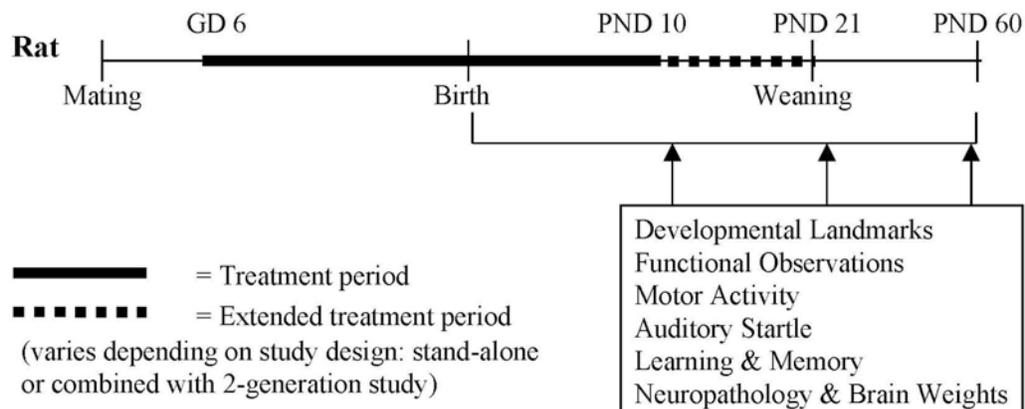
One-Generation Reproduction Study



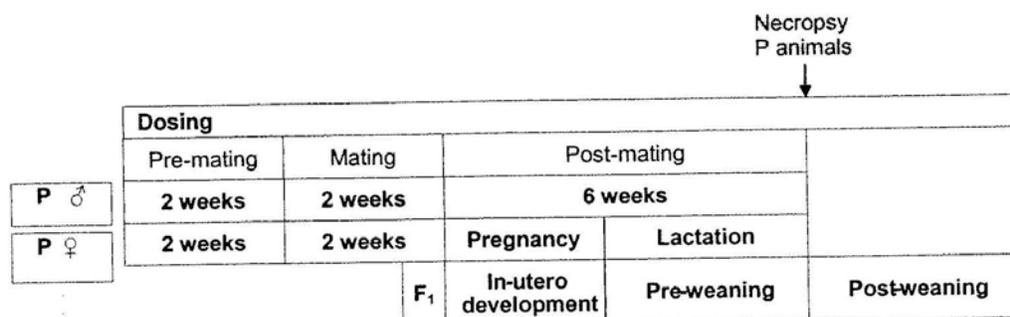
Two-Generation Reproduction Study



Developmental Neurotoxicity Study



Extended One-Generation Reproduction Study



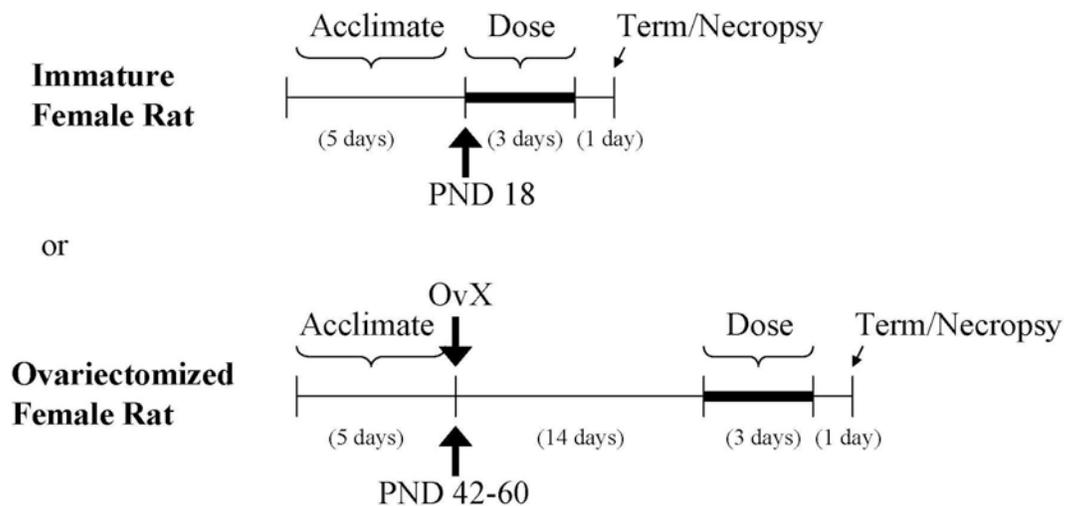
Parental generation	Cohort	Designation	Animals/Cohort	Sexual Maturation	Approximate age at necropsy (weeks)
Target is 20 litters per group	1A	Reproductive	20 M +20 F	Yes	13
	1B	Reproductive	20 M +20 F	Yes	14 or 20 if triggered
	2A	Neurotoxicity	10 M +10 F@	Yes	9
	2B	Neurotoxicity	10 M +10 F@	No	3
	3	Immunotoxicity	10 M +10 F@	Yes	8
	Surplus	Spares		No	3

@ one per litter and representative of 20 litters in total where possible

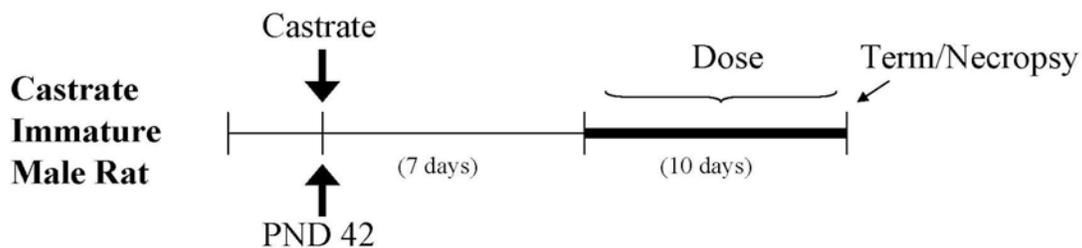
Figure 2. Mammalian *in vivo* endocrine assays

Timelines for study conduct are presented for the uterotrophic assay (OECD 2007b, U.S. EPA 2009a), the Hershberger assay (OECD 2009a, U.S. EPA 2009b), and the male and female pubertal assays (U.S. EPA 2009c,d). Duration of treatment is indicated in each diagram.

Uterotrophic Assay



Hershberger Assay



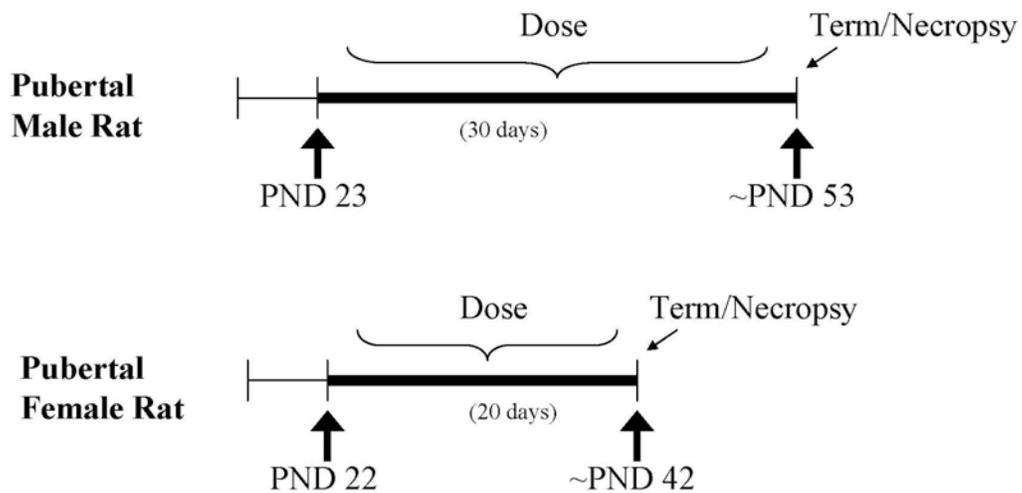
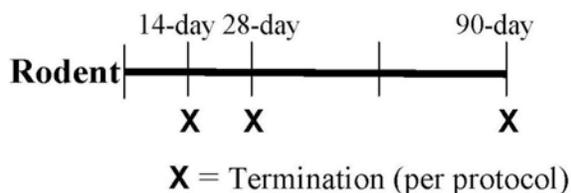
Pubertal Assays

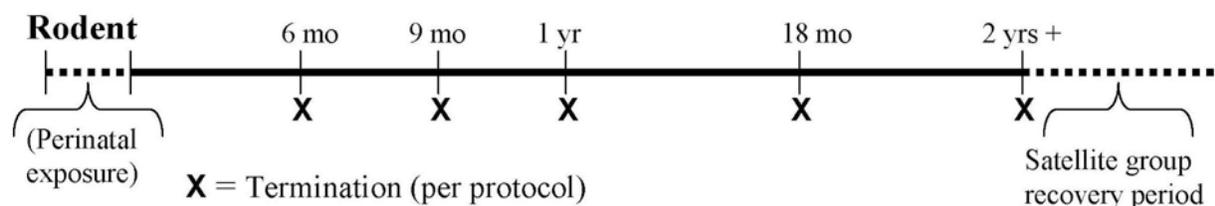
Figure 3. Subacute, subchronic, and chronic/carcinogenicity studies in rodents

Timelines for study conduct are presented for subacute (OECD 2005, U.S. EPA 2000c), subchronic (OECD 1998, U.S. EPA 1998c), and chronic/carcinogenicity studies (OECD 2009b,c, U.S. EPA 1998d,e,f, 2001). Treatment is continuous from study initiation until termination. In the chronic/carcinogenicity study, dashed lines indicate a non-standard study phase: the perinatal exposure segment is unique to NTP studies, and the satellite group recovery period is considered optional.

Subacute and Subchronic Studies



Chronic/Carcinogenicity Studies



References:

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http://www.oecd.org/document/55/0,3343,en_2649_34377_2349687_1_1_1_1,00.html
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