

Peer Review of Draft NTP Technical Reports

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National Toxicology Program (NTP) Technical Reports

- Technical Reports present NTP studies that were conducted to evaluate potential toxicity and/or carcinogenic activity of substances due to public health concern
- Peer-review of draft Technical Reports:
 - TR-597: 2-Hydroxy-4-methoxybenzophenone (HMB)
 - TR-598: Perfluorooctanoic Acid (PFOA)
- These reports present Level of Evidence (LOE) conclusions for the potential carcinogenic activity of the chemical tested. An additional conclusion is included in the PFOA report evaluating perinatal exposure contribution to chronic toxicity and carcinogenic activity



- **Clear evidence of carcinogenic activity**
 - Dose-related (i) increase of malignant neoplasms, (ii) increase of a combination of malignant and benign neoplasms, or (iii) marked increase of benign neoplasms if there is an indication from this or other studies of the ability of such tumors to progress to malignancy
- **Some evidence of carcinogenic activity**
 - Chemical-related increased incidence of neoplasms in which the strength of the response is less than that required for clear evidence
- **Equivocal evidence of carcinogenic activity**
 - Marginal increase of neoplasms that may be chemical related
- **No evidence of carcinogenic activity**
- **Inadequate study**



Factors Considered in Applying LOE Categories

- Statistics
- Dose-relationship
- Common versus uncommon lesions
- Concurrent and historical control data
- Multiplicity
- Latency
- Progression: benign to malignant and metastases
- Pre-neoplastic lesions
- Survival
- Body weight effects
- Structure-activity correlations
- Genetic toxicology
- Findings in the other sex or species
- Combinations of neoplasms in the same tissue



- The concurrent control is more important for comparison than the historical control in interpreting findings
- However, historical control data can provide context of the findings.
- NTP historical controls, including current studies, are present in the reports and are publicly available:
 - <https://ntp.niehs.nih.gov/results/dbsearch/historical>



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Questions?





- Charge:
 - Review and evaluate the scientific and technical elements of the study and its presentation.
 - Determine whether the study's experimental design, conduct, and findings support NTP's conclusions regarding the hypothesis under the conditions of this study.
- Study Hypothesis:
 - Exposure to 2-hydroxy-4-methoxybenzophenone will induce carcinogenic activity or toxicity when administered in feed to rats or mice through two years of age.



- Charge:
 - Review and evaluate the scientific and technical elements of the study and its presentation
 - Determine whether the study's experimental design, conduct, and findings support NTP's conclusions regarding the hypothesis under the conditions of this study.
- Study Hypothesis:
 - Exposure to perfluorooctanoic acid during gestation and lactation (perinatal exposure) combined with postweaning exposure changes the perfluorooctanoic acid carcinogenic response quantitatively (more neoplasms) or qualitatively (different neoplasm types) compared to postweaning exposure alone.