

4-tert-Octylphenol (CAS no. 140-66-9)

[Current status]

Finished Tier 2 *In vivo* tests



Results of Reliability Evaluation (based on literature information)

| Suggested Effects | | | | | | | |
|-------------------|-----------------|------------|-----------------|-----------|----------------|----------|---------|
| Estrogenic | Anti-estrogenic | Androgenic | Anti-androgenic | Thyroidal | Anti-thyroidal | Ecdysone | Others* |
| P | - | - | P | - | P | - | P |

P: Effects suggested by existing information

-: Effects NOT suggested by existing information

*Others: Hypothalamic-Pituitary-Gonad Axis etc.

** : Effects suggested by USEPA EDSP

Results of Tier 1 *in vitro* tests

| Tested Mode of Actions | | | | | | | |
|------------------------|-----------------|------------|-------------------|-----------|----------------|----------|---------|
| Estrogenic | Anti-estrogenic | Androgenic | Anti-androgenic | Thyroidal | Anti-thyroidal | Ecdysone | Others* |
| P | - | - | To be implemented | - | N | - | - |

P: EC₅₀ or IC₅₀ values were detected

N: EC₅₀ or IC₅₀ values were not detected

*: etc.

To be implemented: Mode of actions selected but not tested yet

-: Mode of actions not selected for testing

Results of Tier 1 *In vivo* tests

Fish Short Term Reproduction Assay (FSTRA: OECD TG229) using Medaka

An increase in male hepatic vitellogenin level was observed at sublethal concentrations, indicating its estrogenic effect.

Results of Tier 2 *In vivo* tests

The Medaka Extended One-Generation Test (MEOGRT: OECD TG240)

Fish were exposed to 0.926, 3.21, 9.91, 31.1 and 99.2 µg/L (measured mean concentrations) for 19 weeks. At levels where mortality was not dose-dependent (99.2 µg/L and lower), a significant increase in male liver vitellogenin level was observed. Thus, 4-*tert*-octylphenol was identified as estrogenic.

At 9.91 µg/L and higher, a significant decrease was observed in total egg and fertile egg, indicating reproductive toxicity to Medaka. This lowest observed effect concentration (LOEC) was ca. 320 times as high as the highest environmental water concentration of 0.031 µg/L that was measured in MOE's Environmental Survey and Monitoring of Chemicals in FY2012.

The exposure level which did not indicate reproductive toxicity to Medaka was 3.21 µg/L and ca. 100 times as high as the highest environmental water concentration of 0.031 µg/L that was measured in MOE's Environmental Survey and Monitoring of Chemicals in FY2012.