Triclosan exposure reduces thyroxine levels in pregnant and lactating rat dams and in directly exposed offspring - DTU Orbit (06/08/2016)

Triclosan exposure reduces thyroxine levels in pregnant and lactating rat dams and in directly exposed offspring

Thyroid disrupting chemicals can potentially disrupt brain development. Two studies investigating the effect of the antibacterial compound triclosan on thyroxine (T4) levels in rats are reported. In the first, Wistar rat dams were gavaged with 75, 150 or 300 mg triclosan/kg bw/day throughout gestation and lactation. Total T4 serum levels were measured in dams and offspring, and all doses of triclosan significantly lowered T4 in dams, but no significant effects on T4 levels were seen in the offspring at the end of the lactation period. Since this lack of effect could be due to minimal exposure through maternal milk, a second study using direct per oral pup exposure from postnatal day 3–16 to 50 or 150 mg triclosan/kg bw/day was performed. This exposure pointed to significant T4 reductions in 16 day old offspring in both dose groups. These results corroborate previous studies showing that in rats lactational transfer of triclosan seems limited. Since an optimal study design for testing potential developmental neurotoxicants in rats, should include exposure during both the pre- and postnatal periods of brain development, we suggest that in the case of triclosan, direct dosing of pups may be the best way to obtain that goal.

General information

State: Published
Organisations: National Food Institute, Division of Toxicology and Risk Assessment
Authors: Petersen, M. A. (Intern), Boberg, J. (Intern), Vinggaard, A. M. (Intern), Christiansen, S. (Intern), Hass, U. (Intern)
Keywords: (Triclosan, Rat, Thyroxine (T4), Developmental, Thyroid disrupting chemical (TDC))
Pages: 534–540
Publication date: 2013
Main Research Area: Technical/natural sciences

Publication information

Journal: Food and Chemical Toxicology
Volume: 59
ISSN (Print): 0278-6915
Ratings:
BFI (2015): BFI-level 1
Scopus rating (2015): 1.19 1.349
BFI (2014): BFI-level 1
Scopus rating (2014): 1.032 1.36
BFI (2013): BFI-level 1
Scopus rating (2013): 1.005 1.515
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): 1.127 1.753
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): 1.118 1.592
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): 0.92 1.215
BFI (2009): BFI-level 1
Scopus rating (2009): 0.819 1.052
BFI (2008): BFI-level 2
Scopus rating (2008): 0.777 1.132
Scopus rating (2007): 0.802 1.444
Scopus rating (2006): 0.865 1.371
Scopus rating (2005): 0.831 1.192
Scopus rating (2004): 0.856 1.208
Scopus rating (2003): 0.673 1.038
Scopus rating (2002): 0.602 1.118
Scopus rating (2001): 0.566 1.009
Scopus rating (2000): 0.501 0.899
Scopus rating (1999): 0.486 0.968
Original language: English
DOIs:

10.1016/j.fct.2013.06.050
Source: dtu
Source-ID: u::8371
Publication: Research - peer-review › Journal article – Annual report year: 2013