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Peroxisome Proliferation and its Role in Carcinogenesis

Views and expert opinions of an IARC Working Group
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2. AUTHORED PAPERS

A. The Biology and Molecular Consequences of Peroxisome Proliferation in Experimental Animals and Humans
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B. Postulated Mechanisms of Carcinogenicity Mediated by Peroxisome Proliferators
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Table 1. Database for examining the concordance between hepatocellular peroxisome proliferation (PP) and hepatocarcinogenicity (HC) in rats and mice (M, male; F, female)

Compound	CAS No.	Rats					Mice				
		Strain	PP		HC		Strain	PP		HC	
			M	F	M	F		M	F	M	F
Benzylbutyl phthalate	85-68-7	F344		–		–					
Cinnamyl anthranilate	87-29-6	F344	–	+	–	–	B6C3F1	+	+	+	+
Ciprofibrate	52214-84-3	F344	+		+		C57Bl	+		+	
Clobuzarit	22494-47-9	Wistar	+		–		C57Bl	+		+	
Clofibrate	637-07-0	SD F344 Wistar	+ + +	+	+ + –	+	C57Bl Swiss	++		– –	
Di(2-ethylhexyl)adipate	103-23-1	F344	+	+	–	–	B6C3F1	+	+	–	+
Di(2-ethylhexyl)phthalate	117-81-7	F344	+	+	+	+					
Di-isononyl phthalate	28553-12-0	F344	–	–	–	–					
Gemfibrozil	25812-30-0	SD	+		+						
Lactofen	3513-60-4						CD–1	+	+	+	+
LY 171883	88107-10-2						B6C3F1		+		+
Methylclofenapate	21340-68-1	F344	+		+						
Nafenopin	3771-19-5	F344	+		+						
Tetrachloroethylene	127-18-4	F344	–	–	–	–	B6C3F1	+	+	+	+
Tibric acid	37087-94-8	F344	+		+						
Trichloroacetic acid	76-03-9						B6C3F1	+		+	
Trichloroethylene	79–01–6	F344 Osborne-Mendel	– –		– –		B6C3F1	+		+	
Wy-14,643	50892-23-4	F344	+		+						

Adapted from Ashby *et al.* (1994)

Table 2. Overall activity of hepatocarcinogenic peroxisome proliferators in assays for morphological cell transformation and gap-junctional intercellular communication

Compound	Cell transformation	Intercellular communication
Clofibrate	+	+
Di(2-ethylhexyl)adipate	–	
Di(2-ethylhexyl)phthalate	+	+
Methylclofenapate		–
Nafenopin		+
Trichloroethylene	+	+
Trichloroacetic acid		+
Wy-14,643	+	+

+, Most assays with the compound gave a positive response (i.e. induced cell transformation or decreased intercellular communication).

–, Most assays with the compound gave a negative response (i.e. did not induce cell transformation or did not decrease intercellular communication).