

Guidelines/Criteria		
	Reference: Beattie MK, Gerstenberger S, Hoffman R, Dellinger JA. 1996. Rodent neurotoxicity bioassays for screening contaminated Great Lakes fish. Environ Toxicol Chem 15(3):313-318.	
In vivo Study Type Route of Administration Species & age of animals	Sub-chronic behavioural/neurotoxicity study Diet Male hooded Sprague-Dawley rats	Sub-chronic behavioural/neurotoxicity study Diet Female hooded Sprague-Dawley rats
Study Duration	90 days	90 days
Type of Mixture Binary >2 components Similar acting or dissimilar What Mode of Action was investigated?	No Various fish from the Great Lakes, rat chow or potatoes were used as the diet. Both Nothing specific	No Various fish from the Great Lakes or rat chow were used as the diet. Both Nothing specific
Parameters/End points Measured Target organs/Critical effects Pharmacological changes or adverse effects	Weight gain and a battery of behavioural and motor activity tests Potentially adverse	Weight gain, liver weight and a battery of behavioural and motor activity tests Potentially adverse
Individual Components Characterisation of individual compounds Name, exact chemical name, CAS no. Were dose responses established for individual components? Were no effect levels established? Were doses below the NO(A)ELs investigated?	None N/A No No N/A	None N/A No No N/A
Mixtures Investigated Number of dose levels How does the mixture make-up compare to individual components? (e.g. low dose) equivalents used?) No. of technical replicates per exposure condition (<i>in vitro</i>) No. of animals per dose group (<i>in vivo</i>)	One The diets 100% potatoes, rat chow, walleye, whitefish or lake trout from Lake Superior, or carp from Little Lake Butte des Morte (LLBM) for 45 days, followed by 45 days on control diets. 7	One The diets 100% rat chow, walleye, (walleye spiked with MeHg), whitefish or lake trout from Lake Superior, carp from Little Lake Butte des Morte (LLBM), or Pacific salmon (control) for 90 days. 8
Observations/Findings	Minimal behavioural effects. (Reduced weight gain on the potato diet.)	Ignoring the results for walleye spiked with MeHg, the effects seen were: reduction in accelerating rotarod score and second footsplay with an amphetamine challenge for the group fed walleye in comparison to the groups fed whitefish; reduction in accelerating rotarod score with apomorphine challenge for the group fed carp in comparison to the groups fed salmon. These effects were only apparent towards the end of the study.
Overall opinion (e.g. sufficient numbers of groups investigated, group sizes adequate, observations reproducible, low dose levels used investigated)	No appropriate controls, i.e. uncontaminated fish, therefore even if there had been effects they would not have been interpretable.	The pacific salmon is an appropriate control, but was only used as such for the carp and trout groups. Whitefish was used as the control for the walleye, though without sufficient justification. This makes claimed effects hard to interpret. Still there seem to be some effects of diet, which may be attributable to contaminants. NB the effects were seen only with a pharmaceutical challenge, which is at an effect level. Certainly the effects do not correspond to a realistic case for human risk because the rat diets were 100% fish.