

Guidelines/Criteria		
	Reference: Omara FO, Brochu C, Filpo D, Denizeau F, Fournier M. 1997. Immunotoxicity of environmentally relevant mixtures of polychlorinated aromatic hydrocarbons with methyl mercury on rat lymphocytes in vitro. Environ Toxicol Chem 16(3):576-581.	Omara FO, Filpo D, Brochu C, Denizeau F, Brousseau P, Potworowski EF, Fournier M. 1998. Lack of suppressive effects of mixtures containing low levels of methylmercury (MeHg), polychlorinated dibenzo-p-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), and aroclor biphenyls (PCBs) on mixed lymphocyte reaction, phagocytic, and natural killer cell activities of rat leukocytes in vitro. J Toxicol Environ Health, Part A 54(1-2):561-577.
<b>In vitro Study Type</b> Route of Administration Species & age of animals	Rat splenocyte viability assay	Rat leukocyte viability assay
<b>Study Duration</b>	4 to 72 hours	24hrs
<b>Type of Mixture</b> Binary >2 components Similar acting or dissimilar What Mode of Action was investigated?	No Yes Dissimilar and similar Just cytotoxicity	No Yes Dissimilar and similar Just cytotoxicity
<b>Parameters/End points Measured</b> Target organs/Critical effects Pharmacological changes or adverse effects <i>In vitro</i>	Cell viability using propidium iodide	Cell viability using propidium iodide
<b>Individual Components</b> Characterisation of individual compounds Name, exact chemical name, CAS no.	Methyl-mercury, a mixture of PCDD/PCDFs (not further specified), and a mixture of PCBs (arochlor 1242, 1254 and 1260). I'm going to write this up as if these are three single components, though two are themselves complex mixtures.	Methyl-mercury, a mixture of PCDD/PCDFs (not further specified), and a mixture of PCBs (arochlor 1242, 1254 and 1260). I'm going to write this up as if these are three single components, though two are themselves complex mixtures.
Were dose responses established for individual components? Were no effect levels established?	Yes, though with very few dose levels Yes, 0.1 ug/ml for methyl-mercury (there was an effect at 2), 15 pg/ml for the PCDD/PCDF mixture (highest dose) and 0.5 ug/ml for the PCB mixture (highest dose tested)	Yes, though with very few dose levels Yes, 0.1 ug/ml for methyl-mercury (there was an effect at 2), 15 pg/ml for the PCDD/PCDF mixture (highest dose) and 0.5 ug/ml for the PCB mixture (highest dose tested)
Were doses below the NO(A)ELs investigated?	Yes, one for the PCDD/PCDF mixture and one for the PCB mixture	Yes, one for the PCDD/PCDF mixture and one for the PCB mixture
<b>Mixtures Investigated</b> 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> )	4 relevant mixtures were tested, i.e. ones where each component was at a NOEL No particular rationale. The four relevant mixtures tested all contained 1x the NOEL of methyl-mercury, and 0.07 or 1x the NOEL of the PCDD/PCDF mixture, and 0.02x or 1x the NOEL of the PCB mixture. Two experiments each run in "pentatriPLICATE"	4 relevant mixtures were tested, i.e. ones where each component was at a NOEL No particular rationale. The four relevant mixtures tested all contained 1x the NOEL of methyl-mercury, and 0.07 or 1x the NOEL of the PCDD/PCDF mixture, and 0.02x or 1x the NOEL of the PCB mixture. Two experiments each run in triplicate
<b>Observations/Findings</b>	No effects seen for any treatments where each component was at a NOEL, i.e. for the four relevant mixtures, at any of 4 timepoints.	No effects seen for any treatments where each component was at a NOEL, i.e. for the four relevant mixtures, at any of 4 timepoints.
<b>Overall opinion</b> (e.g. sufficient numbers of groups investigated, group sizes adequate, observations reproducible, low dose levels used investigated)	Well conducted. Other study also in the paper involved testing the effect of these same chemicals on the mitogenic activity of known mitogens. This other study deemed to be not relevant.	Well conducted. Results of the earlier study are also summarised in this paper. Various other assays are also included in the paper, but all showed no effect in any treatment group.