

Guidelines/Criteria	
Reference	Ashby J, Lefevre PA, Odum J, Harris CA, Routledge EJ, Sumpter JP. 1997. Synergy between synthetic oestrogens? Nature 385(6616):494.
<b>In vitro Study Type</b> Route of Administration Species & age of animals	hER yeast assay
<b>Study Duration</b>	Not reported
<b>Type of Mixture</b> Binary >2 components Similar acting or dissimilar What Mode of Action was investigated?	Yes No Perhaps similar Oestrogenicity
<b>Parameters/End points Measured</b> Target organs/Critical effects Pharmacological changes or adverse effects <i>In vitro</i>	Oestrogen receptor activation (using lacZ reporter gene)
<b>Individual Components</b> 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?	Dieldrin and endosulfan  Yes  In a sense - no concentration up to the limit of solubility produced an effect Yes, 8 of them.
<b>Mixtures Investigated</b> Number of dose levels How does the mixture make-up compare to individual components? (eg 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> )	9 Equimolar mixture Not stated
<b>Observations/Findings</b>	No effect of mixture when tested up to the limit of solubility
<b>Overall opinion</b> (e.g. sufficient numbers of groups investigated, group sizes adequate, observations reproducible, low dose levels used investigated)	Inadequate in terms of information reported (the article was classed as correspondence). A mixture of methoxychlor and dieldrin was also tested, but only at an effect level of methoxychlor.

Guidelines/Criteria	
	Reference: Ashby J, Lefevre PA, Odum J, Harris CA, Routledge EJ, Sumpter JP. 1997. Synergy between synthetic oestrogens? Nature 385(6616):494.
<b>In vivo Study Type</b> Route of Administration Species & age of animals	Uterotrophic assay Not stated Sexually immature female rats
<b>Study Duration</b>	Dosed for 3 days, terminated on the fourth
<b>Type of Mixture</b> Binary >2 components Similar acting or dissimilar What Mode of Action was investigated?	Yes No Perhaps similar Oestrogenicity
<b>Parameters/End points Measured</b> Target organs/Critical effects Pharmacological changes or adverse effects	Weight of uterus Debatable
<b>Individual Components</b> 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?	Dieldrin and endosulfan In a sense - no effect was seen up to the MTD  100 mg/kg for each Yes, 4 lower doses down to 5mg/kg
<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 (in vitro) No. of animals per dose group (in vivo)	4 Equal concentration  5-18, typically 5
<b>Observations/Findings</b>	No effect of each component singly up to the MTD (100mg/kg), and no effect of the mixture up to the top dose tested (75mg/kg of each component).
<b>Overall opinion</b> (e.g. sufficient numbers of groups investigated, group sizes adequate, observations reproducible, low dose levels used investigated)	Not great in terms of information reported (the article was classed as correspondence). Uninteresting result. A mixture of methoxychlor and dieldrin was also tested, but it is unclear if the mixture was tested at a NOEL of each component.