Neurobehavioural teratology of laboratory rodents: methodological issues in a study of early postnatal exposure to 22',6,6'- and 3,3',4,4'-Tetraclorobiphenil

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PCBs are a family of chemical compounds widely used in a variety of industrial applications. They become bioconcentrate in the food chain accumulating readily in mammals. PCBs have long been implicated as neurotoxicant chemicals in humans and wildlife and perinatal exposure to these compounds has been related to neurodevelopmental deficit. In particular, *in utero* and lactational exposure to PCB has been associated with cognitive and motor-reflex dysfunction as well as with changes in selected items of sexual behaviour. Methodological problems, however, raise questions about interpreting these findings, particularly about the specificity of the neurotoxicant effects of PCBs and their mechanism(s) of action.

Aim of the present study was to evaluate subtle PCB effects in developing animals using sensitive and appropriate neurobehavioral endpoints.

Neonatal mice were exposed to 0.8 and 8 mg/Kg of PCB 54 or PCB 77 during the first week of life (subcutaneously, postnatal days 3 and 5), and somatic and neurobehavioural development were scored according to a modified Fox's scale. Ultrasonic vocalization pattern, homing performance, open-field activity and social and aggressive interaction in the sub-adult and adult males were also assessed.

PCB exposed mice were slightly hyperactive at weaning, showing some differences in behavioural patterns during social encounter, in absence of major somatic of neurobehavioural alteration in the pre-weaning stage.

Moreover, both compounds clearly affect aggressive behaviour of adult mice, PCB treated mice being significantly less aggressive. The low dose of PCB 77 resulted the most effective in reducing intermale agonistic items.