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# **Investigation of the behavioural toxicity of an oral chronic administration of cow milk contaminated with PCBs in rats**

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Among the persistent organic pollutants, polychlorinated biphenyls (PCBs) are of risk for the human health because of their ability to accumulate in food and their highly toxic properties, especially for the brain. Recent findings demonstrate that these contaminants can be found in significant quantities in the milk of lactating women and ruminants, suggesting a greater danger for milk consumers like newborns and infants. Thus, the objective of the present study was to investigate the neurobehavioural toxicity of a chronic administration of PCB-contaminated cow milk in adult rats. Two groups of Wistar male rats (n = 10) were used. The "treated" group was daily administered by gavage with 0.5 ml/100g b.w. of PCB-contaminated milk for 90 days, which corresponded to daily intake concentrations of "dioxin-like PCBs" and "non dioxin-like PCBs" of 1.8 pg TEQ<sub>OMS</sub> and 6.1 ng per kg bodyweight, respectively. In parallel, the control animals received the same volume of a commercial milk preparation. At the end of the period of exposure, the animals were tested for their behavioural performances related to activity in the open-field, locomotor coordination in the Locotronic<sup>®</sup>, anxiety in the elevated-plus maze, and spatial learning and memory in the T-maze and the eight-arm maze. The results showed a significant decrease in general activity of rats that were fed with PCB-contaminated milk in several tests like the open-field, the elevated plus maze, and the T-maze, whereas the body weight, the level of anxiety, the learning performances and the locomotor coordination were unaffected by PCBs. In conclusion, such results showed that the chronic ingestion of PCBs present in the milk from an accidental pollution is able to induce subtle behavioural changes, and then can be potentially toxic for the brain.

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