

## **Reviewer's report**

**Title:** Effect of dioxins on regulation of tyrosine hydroxylase gene expression by aryl hydrocarbon receptor: a neurotoxicology study

**Version:** 1 **Date:** 2 April 2009

**Reviewer:** Matti Viluksela

### **Reviewer's report:**

This manuscript describes TCDD-induced transactivation of the TH gene via AhR-AHRE-III mediated pathway that does not involve XRE. Activation of this pathway results in increased dopamine synthesis, which may play a role in neurotoxicity of dioxins. The question at issue is relevant, the used methodology is sophisticated and the results are novel and interesting, and broaden the current understanding on the mechanisms of dioxin toxicity in general. The manuscript is well written and balanced.

### **Minor Essential Revisions**

1. Abstract, Conclusions section (p. 3): Please revise the structure and spelling of the first sentence.
2. Background (p. 6): Please revise this inaccurate sentence (how the level of dopamine was "associated" with exposure of TCDD?): "In fact, another study has shown that the level of dopamine was associated with subchronic exposure of TCDD in rats [34]."

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

### **Declaration of competing interests:**

I declare that I have no competing interests.