

POSTER

## **BINARY MIXTURE OF BISPHENOL A (BPA) AND ETHANOL: EFFECTS ON *XENOPUS LAEVIS* DEVELOPMENT (R-FETAX)**

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Bisphenol A (BPA) is a widely used plastic additive with recognized endocrine-disrupting activity and was classified in 2017 by the European Chemicals Agency (ECHA) as a substance of very high concern. Increasing evidence has associated environmental exposure to BPA with developmental and congenital abnormalities in both humans and experimental animal models, including the amphibian *Xenopus laevis*. In addition to BPA, ethanol (Eth) is one of the most common environmental and dietary xenobiotics, known to interfere with embryonic development and neurobehavioral processes. Previous studies conducted by our group using the R-FETAX assay demonstrated for both BPA and Eth teratogenic and neuro-developmental effects. Despite the widespread co-occurrence of BPA and ethanol exposure, limited information is available regarding their combined effects during embryogenesis. In the present study, embryos obtained by natural mating were exposed to a binary mixture of BPA

(0-12.5-25-30  $\mu$ M) and ethanol (0.1%, dose described as not-effective for *X. laevis* development) during specific developmental windows: i) gastrulation and organogenetic periods, particularly sensitive to morphological abnormalities; ii) neurodevelopmental stages associated with behavioral alterations. Embryos were monitored throughout the six-day R-FETAX test for lethal effects, while external morphology and developmental progression were evaluated at the end of the exposure period. Neurobehavioral alterations were assessed using the neurobehavioral swimming test. Effects were modelled using PROAST software package ([www.proastweb.rivm.nl](http://www.proastweb.rivm.nl)): dose-relationship curves were obtained and benchmark dose level derived, setting response at levels used as point of departure for risk assessment. Results suggest that a non-effective concentration of Eth, when combined with BPA, enhanced the observed responses, affecting both teratogenic endpoints (head abnormalities) and neurobehavioral parameters (abnormal swimming pattern).