

Comparative assessment of the toxicity of bisphenol A and its alternatives: an *in vitro* study

Brigite Marques¹, Miguel Oliveira^{1,2}, Carolina Frazão^{1,2}, Isabel Lopes^{*1,2}

¹Department of Biology, University of Aveiro, Aveiro, Portugal

²CESAM - Centre for Environmental and Marine Studies, Department of Biology, University of Aveiro, Aveiro, Portugal

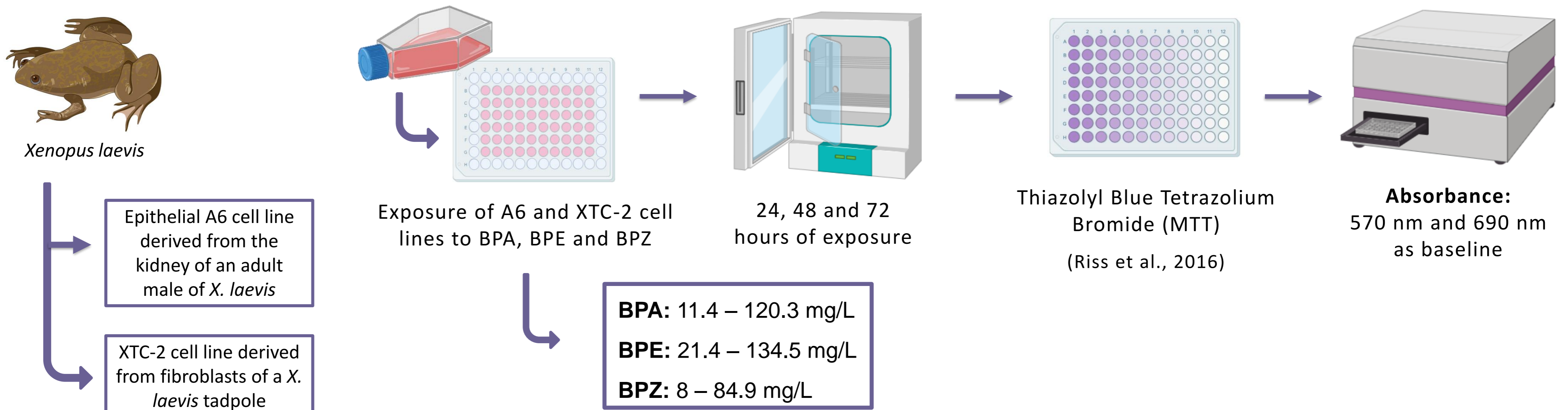
mail to: ilopes@ua.pt

INTRODUCTION & AIM

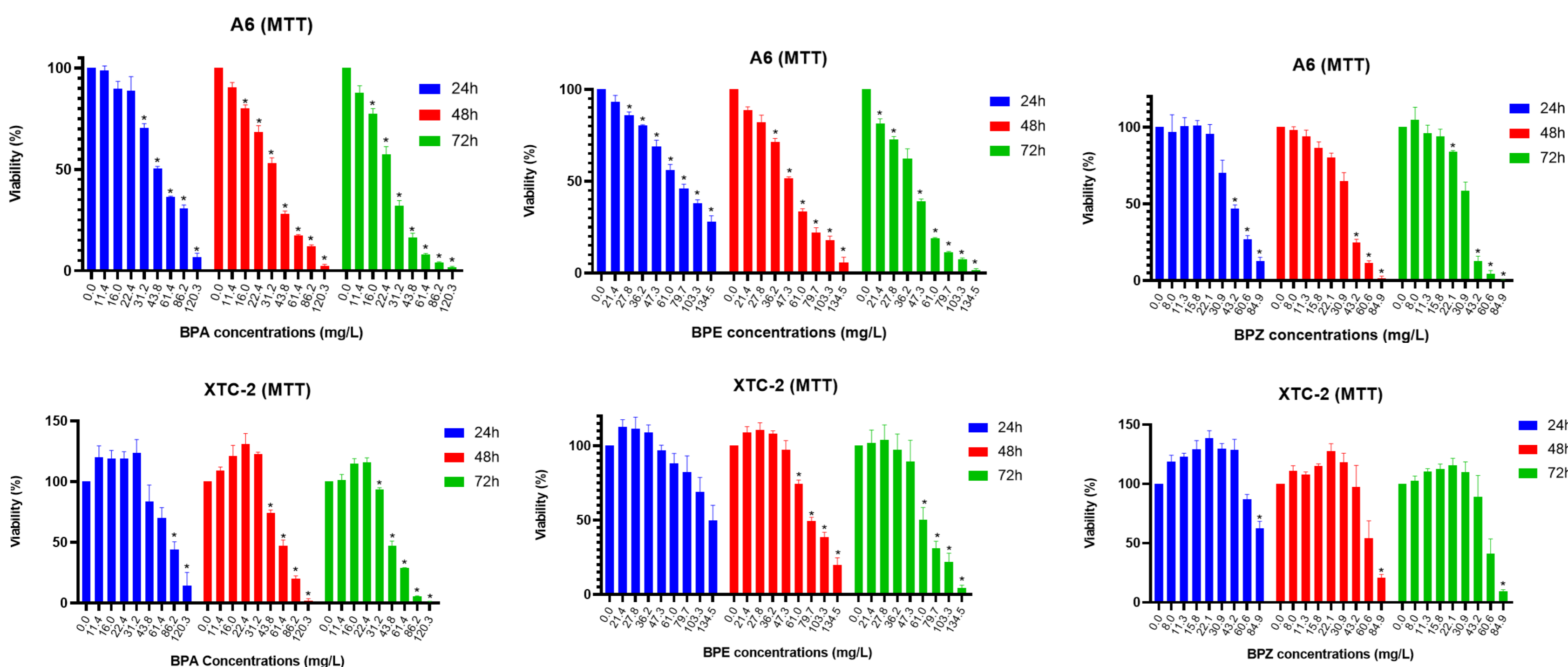
- Bisphenol A (BPA) has been widely used as an additive in the plastic industry. Nowadays is known for being an endocrine disruptor causing diverse toxic effects on biota such as feminization, teratogenic effects, and deviations on the fitness and behavior of organisms.
- BPA is now being replaced by analogs, including bisphenol E (BPE) and bisphenol Z (BPZ), considered less environmental harmful and with similar functionality. These analogs are already being detected in the environment which raises ecological concerns.
- Amphibia is the class of vertebrates with the highest proportion of species threatened of extinction with one of the main causes being chemical contamination.

AIM: To make a comparative assessment of the cytotoxicity, for amphibian cell lines, of BPA and its analogues BPE and BPZ to assess their safety as alternatives to BPA.

METHODS



RESULTS



	XTC-2 LC ₅₀ , 72h	A6 LC ₅₀ , 72h
BPA	45.5 mg/L	24.6 mg/L
BPE	64.7 mg/L	41.6 mg/L
BPZ	57.1 mg/L	32.1 mg/L

CONCLUSION

- Analyzing the values of LCs, the cytotoxicity can be ranked as BPA>BPZ>BPE for both cell lines. The A6 cell line revealed to be the most sensitive.
- This suggest that BPA alternatives appear to be less toxic.

REFERENCES

Riss, T. L., Moravec, R. A., & Niles, A. L. (2016). Cell Viability Assays. In The Assay Guidance Manual