

A. Fuster Aparisi^{1,2}, G. Escarrer Garau¹, J. Truyols Vives¹, L.I. Garcia Moll², M. Cañete Cánaves¹, M. M. Estrany Celià¹, M. M. Ribas³, M. M. Quetglas Llabrés^{3,4,5}, M. González López², M. Jiménez García⁶, R. Alayón Afonso⁷, M. Monserrat Mesquida^{3,4,5}, S. Tejada Gavela⁶, M. David Ferrer Reynés^{3,1}, A. Sureda Gomila^{3,4,5}, M. Miró Lladó², J. Mercader Barceló^{1,2}

1. Molecular Biology and One Health Research group (MoONE), Research group, University of the Balearic Islands (UIB), Palma, Islas Baleares, 2. FI-TRACE Research group, UIB, Palma, Islas Baleares, 3. Research group on Community Nutrition & Oxidative Stress, UIB-IUNICS, Palma, Islas Baleares, 4. Centro de Investigación Biomédica en Red de Fisiopatología de la Obesidad y Nutrición (CIBEROBN), Instituto de Salud Carlos III, Madrid, Madrid, España, 5. Health Research Institute of the Balearic Islands (IdISBa), Palma, Islas Baleares, España, 6. Laboratory of Neurophysiology, UIB, Palma, Islas Baleares, España, 7. University Institute of Animal Health and Food Safety (IUSA). University of Las Palmas de Gran Canaria, Las Palmas de Gran Canaria, Las Palmas, España

Introduction

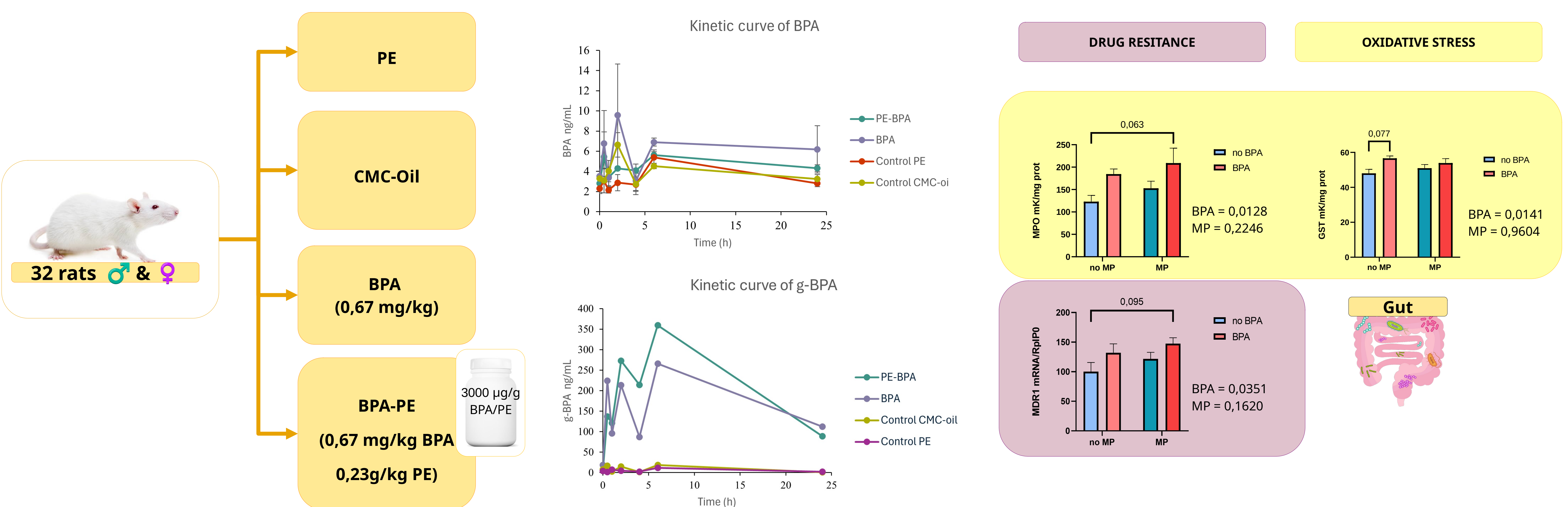
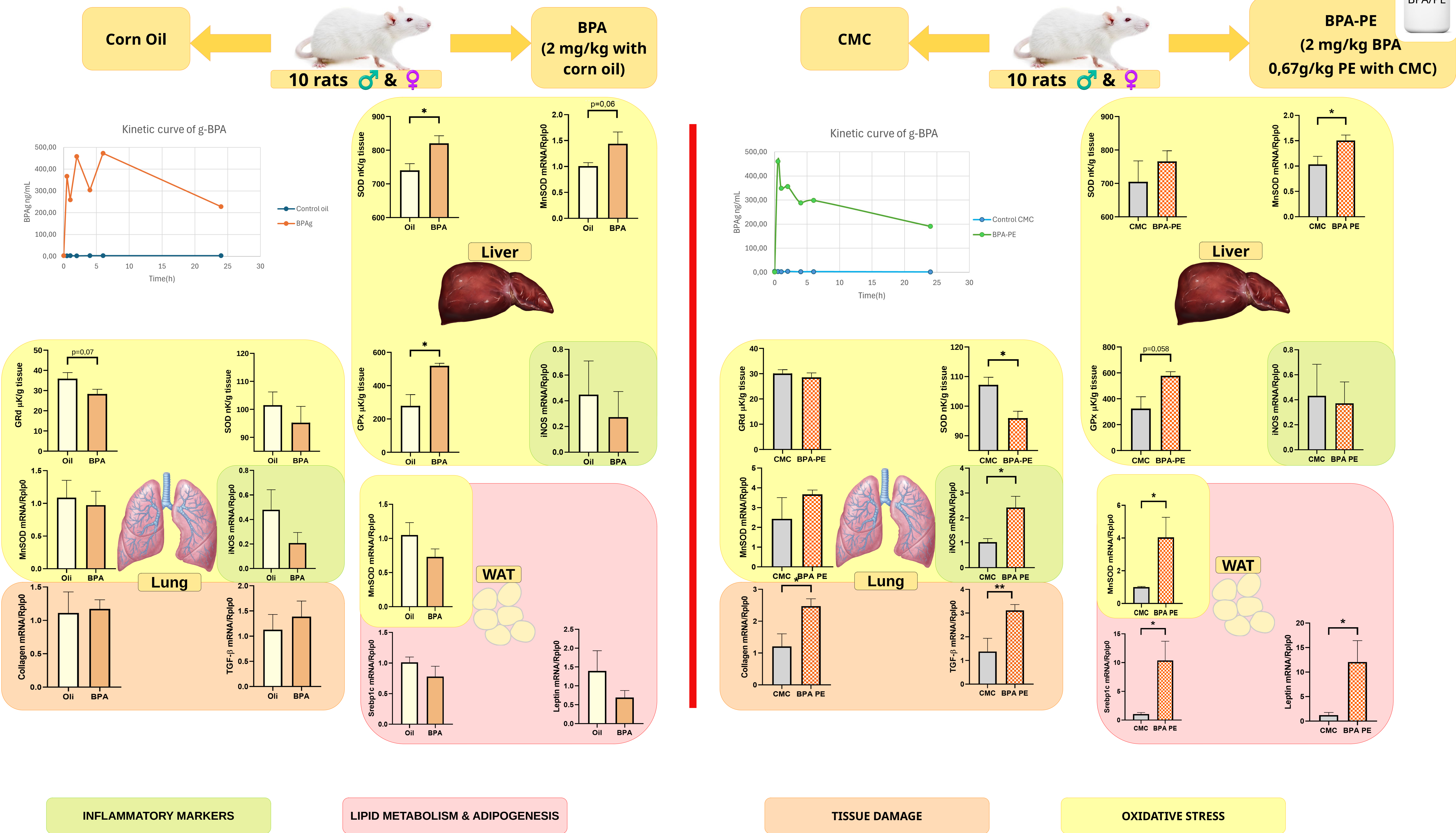
Microplastics (MP) are emerging contaminants ubiquitously present in the food chain. Increasing evidence indicates that MP can be absorbed and accumulated in organs. Plastic additives of MP raise as a major health concern.

Objective

To analyze the bioavailability and health impact of polyethylene (PE)-adsorbed bisphenol A (BPA-PE) and free BPA.

Methodology

Rats were administered orally with BPA, BPA-PE, pristine PE, or their vehicles in different studies. Plasma glucuronidated BPA (g-BPA) was quantified at different time-points with LC-MS. Markers of oxidative stress, inflammation, tissue repair, and detoxification were assessed with RT-qPCR and enzyme activity.



Conclusion

The bioavailability of MP-adsorbed BPA is similar to that of free BPA. However, the body distribution of BPA-PE appears to differ from that of free BPA, affecting organs such as the lung.

Acknowledgment

The authors acknowledge the financial support provided by the Spanish Ministry of Science, Innovation and Universities (MICIU), the Spanish State Research Agency (AEI/10.13039/501100011033) through project PID2020-117686RB-C33 (MICIU/AEI)