



VALIDATION OF NEW MODELS FOR THE ASSESSMENT OF ENDOCRINE/IMMUNE RISK RELATED TO EXPOSURE TO CONTAMINANTS

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Additives, auxiliaries, functional components, or active ingredients are employed by different industries aiming at characterizing the product or added as a functional component to improve its properties, or to facilitate the production by not occurring in the final product. Some of these chemicals, even if are permitted by the current legislation, are suspected to cause adverse effects on human health, by altering the endocrine and/or immune systems. The impact on human health is unclear or only partially known, so a complete risk characterisation is not allowed. The present project aims at investigating the toxicity of several compounds belonging to various chemical classes, used in food as well as cosmetics and pharmaceuticals consumer goods, and considered as Contaminants of Emerging Concern, due to the risk related to their use. To do that, different approaches will be used in parallel, in order to investigate the toxicokinetic aspects related to them both a) biochromatographic techniques, and b) in vitro experiments on cell cultures will be employed; biochromatography is considered an useful predictive tool exploits biomimetic stationary phases supporting biological structures, such as phosphatidylcholine, cholesterol and/or protein structures; c) the effects of chemicals will be investigated by the traditional membrane permeation systems (Franz cells) and new, d) more reproducible systems such as Permeapad®, a high-performance biological barrier. The Permeapad® system, already validated for the passage of the nasal and buccal membranes, consists of barrier that confers greater reproducibility than experiments carried out using animal and/or human skin membranes (1, 2).

REFERENCES

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2. di Cagno M, Bibi HA, Bauer-Brandl A. New biomimetic barrier Permeapad™ for efficient investigation of passive permeability of drugs. *European Journal of Pharmaceutical Sciences*. 2015;73:29-34.