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Endocrine disruption and antimicrobials

Endocrine disruptors are hormonally active substances of natural or synthetic origin affecting the endocrine (hormonal) systems of humans. Such compounds can be found in chemical groups like steroids, cyclic hydrocarbons, phenols, flavonoids, phthalates, parabens or toxic metals. They are used as antimicrobials, biocides, plasticizers, surfactants, UV filters or fire retardants. They may be released from consumer products, e.g. cosmetics, toys, food packaging materials, household products, medical devices and other products of industry or agriculture. In the EU, they are banned for consumer products. Recently regulated CMR substances from the group of Antimicrobials/Preservatives (biocides) comprise: Chloracetamide (Reprotox. Cat. 2), Phenol (Mutagenic Cat. 2), Nonylphenol (Reprotox. Cat. 2), Parabens (pentyl-, phenyl-, benzyl- for absent data on reprotox.), Ketoconazole (Reprotox. Cat. 1B), Boron compounds (Reprotox. Cat. 1B), Formaldehyde (Carcinogenic Cat. 1B), Polyaminopropyl Biguanide-PHMB (Mutagenic Cat. 2). Significant reprotoxic effect has been proved in the past namely for distinct bisphenols (Reprotox. Cat. 2) or phthalates (Reprotox. Cat. 1B or Cat. 2) which were subsequently banned. However, the production of analogous compounds is increasing underlining the necessity to test their safety including reprotoxicity. The European Commission's general policy is

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