

METABOLISATION EXPERIMENTS WITH THE INVERTEBRATE *NEOMYSIS INTEGER*, A STUDY OF SOME NEW ANABOLIC DRUGS

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Analogues of testosterone available on the 'black market' are used amidst body-builders. The same or similar products seized at farms indicate misuse in animal husbandry. Because after administration of these products to the animals or body-builders an elimination pathway is started, it is important to develop methods to identify the formed metabolites. These metabolites, including the parent compound are eliminated in the environment and can contribute to the 'endocrine' pollution. Therefore residue laboratories are required and committed to develop extraction and detection methods to identify and/or quantify the metabolites of these continuously emerging new drugs. In practice, the formation of the metabolites is investigated with animal experiments in which vertebrate animals are treated with the illegal compound. Different matrices of the animal are collected and examined. Because of the complexity and duration of these animal experiments and the method development, a lot of time and money is consumed. Some of these vertebrate experiments can be replaced by invertebrate metabolisation experiments (De Wasch *et al.*, 2002; Verslycke *et al.*, 2002; Poelmans *et al.*, 2003). By using an invertebrate for these metabolisation studies a significant reduction in time and money is achieved and the growing ethical concerns on the use of vertebrate experimental animals are addressed. In addition the invertebrate 'model' can predict which metabolites can be formed in vertebrates.

In this study an invertebrate model, the mysid crustacean *Neomysis integer* (Crustacea, Mysidacea), a common and well-studied species in the Westerscheldt, was used as an alternative model for the metabolisation of some new anabolic drugs. The investigated anabolics were dehydroepiandrosterone (DHEA), maxterone (ADL), 5-androstenedione (5-AED), 5 α -androstenedione (5 α -AED) and 1-testosterone (A1T).

References

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