Angeliki Lyssimachou, **Montserrat Ramón** and Cinta Porte, (2009). Comparative study on the metabolism of the androgen precursor androstenedione in two gastropod species: in vitro alterations by TBT and TPT
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Abstract: A comparative study was performed to assess the metabolism of the androgen precursor androstenedione (AD) in two gastropod species from the Muricidae family: *B olinus brandaris*
and
Hexaplex trunculus
. AD was mainly converted to 5α-dihydrotestosterone by microsomal fractions isolated from *Bolinus brandaris*
, whereas it was primarily metabolized to testosterone by Hexaplex trunculus. Sex differences in the metabolism of AD were only detected in
Bolinus brandaris
and attributed to higher 5α-reductase activity in males. Thereafter, the effect of the organotin compounds, tributyltin (TBT) and triphenyltin (TPT), on the metabolism of AD was investigated. A significant interference was only detected in females, and differences between the modes of action of the two compounds were observed: TPT was a strong inhibitor of 5α-reductase activity in
B. brandaris
at a concentration as low as 100 nM whereas only TBT (10 μM) altered the metabolism of AD in

H. trunculus
by increasing the activity 17β-hydroxysteroid dehydrogenase (17β-HSD). Thus, this work shows that the metabolism of the androgen precursor AD strongly differs among gastropod species, both in terms of activity and metabolic profile, and further demonstrates the ability of TBT and TPT to interfere with key enzymatic pathways involved in androgen synthesis.

Keywords: Androstenedione metabolism; *Bolinus brandaris*; Hexaplex trunculus; 5α-reductase; 17β-HSD; Tributyltin; Triphenyltin; Testosterone