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Data Article

Data on the uptake and metabolism of testosterone by the common mussel, *Mytilus* spp.

Tamar I. Schwarz, Ioanna Katsiadaki, Benjamin H. Maskrey, Alexander P. Scott *

Centre for Environment, Fisheries and Aquaculture Science, Barrack Road, Weymouth, Dorset DT4 8UB, UK.

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ABSTRACT

This article provides data in support of the research article entitled "Rapid uptake, biotransformation, esterification and lack of depuration of testosterone and its metabolites by the common mussel, *Mytilus* spp." (T.I. Schwarz, I. Katsiadaki, B.H. Maskrey, A.P. Scott, 2017) [1]. The uptake of tritiated testosterone (T) from water by mussels is presented. The two main radioactive peaks formed from T and present in the fatty acid ester fraction of mussel tissues were shown to have the same elution positions on a thin layer chromatography plate as 17β-hydroxy-5α-androstan-3-one (DHT) and 5α-androstan-3β,17β-diol (3β,17β-A5α). Reverse phase high performance liquid chromatography of the non-esterified (80% ethanol) fraction of the mussel tissue extracts also presented radioactive peaks at the elution positions of DHT and 3β,17β-A5α. There was no evidence for sulfated T in this fraction. It was shown that aeration led to significant losses of radiolabeled testosterone from the water column.

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* Corresponding author.
E-mail address: alexander.scott@cefas.co.uk (A.P. Scott).

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Specifications Table

Subject area	*Biology*
More specific subject area	*Endocrinology*
Type of data	*Figures*
How data was acquired	*Scintillation counting, HPLC, TLC,*
Data format	*Analyzed*
Experimental factors	*Studying the rate of uptake of tritiated T ([^{3}H]-T) by live mussels and identifying the metabolites produced*
Experimental features	*Measuring rate of disappearance of [^{3}H]-T from water in a vessel containing mussels, extracting and then separating the metabolites in tissue by liquid and thin layer chromatography.*
Data source location	*Portland Harbour, Dorset*
Data accessibility	*Data presented in this article*

Value of the data

- The data provide supporting evidence to challenge the assumption that T found in the flesh of mussels is necessarily of endogenous origin.
- Identification of DHT and 3β,17β-A5α, both metabolites of T, in the ester fraction of mussel tissues has implications for the accuracy of T quantification in mussels from laboratory exposures and the field.
- The lack of testosterone sulfate in tissue extracts shows that sulfation does not play a major role in T metabolism in mussels, in contrast to E_2 metabolism.

1. Data

The data presented in this article show: the uptake of [^{3}H]-T from water by mussels (Fig. 1); thin layer chromatography (TLC) identification of tritiated 3β,17β-A5α, T and DHT in the ester

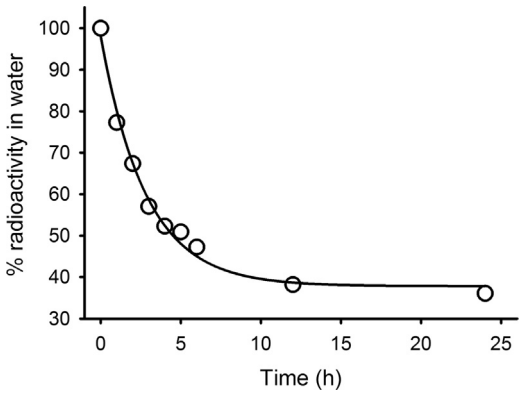

Fig. 1. Removal of radioactivity by *Mytilus* spp. during a 24 h exposure (Experiment 3) in a single polythene bag containing 3.6 L water and 18 animals. Data are presented as percentage radiolabel remaining in the water at each sampling point (○). The curve represents the same data fitted to a three parameter exponential decay equation.