

Bioconversion of Lanosterol into Holotoxinogenin, a Triterpenoid from the Sea Cucumber *Stichopus Californicus*

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Summary Labelled lanosterol is converted 200 times more efficiently than labelled acetate into holotoxinogenin when administered to the sea cucumber *Stichopus californicus*.

SEA cucumbers (Holothurians) of the phylum echinodermata possess toxic triterpenoid saponins¹ but there is conflicting evidence whether the echinoderms in general and holothurians² in particular are capable of *de novo* synthesis of sterols and triterpenoids (trimethylsteroids) from small

precursors (*e.g.*, acetate or mevalonate). We now report that the genin derived from *Stichopus californicus* (collected in Monterey Bay) is identical with holotoxinogenin³ (**1**) (identical with stichopogenin A₄ derived⁴ from *S. japonicus*) and that it can be biosynthesized *de novo* from acetate and [³-³H]lanosterol (**5**).

An aqueous solution of tritiated potassium acetate (25 μ Ci) was injected directly into the abdominal cavity of two sea cucumbers (250—300 g each). [³-³H]Lanosterol (**5**) prepared by reduction of lanostenone (**6**) with LiAl³H₄

