

# Microbial Transformations of $\alpha$ -Santonin

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Fungal biotransformations of  $\alpha$ -santonin (**1**) were conducted with *Mucor plumbeus* (ATCC 4740), *Cunninghamella bainieri* (ATCC 9244), *Cunninghamella echinulata* (ATCC 9245), *Curvularia lunata* (ATCC 12017) and *Rhizopus stolonifer* (ATCC 10404). *Rhizopus stolonifer* (ATCC 10404) metabolized compound **1** to afford 3,4-epoxy- $\alpha$ -santonin (**2**) and 4,5-dihydro- $\alpha$ -santonin (**3**) while *Cunninghamella bainieri* (ATCC 9244), *Cunninghamella echinulata* (ATCC 9245) and *Mucor plumbeus* (ATCC 4740) were capable of metabolizing compound **1** to give a reported metabolite, 1,2-dihydro- $\alpha$ -santonin (**4**). The structures of these transformed metabolites were established with the aid of extensive spectroscopic studies. These fungi regiospecifically reduced the carbon-carbon double bond in ring A of  $\alpha$ -santonin.

*Key words:* 1,2-Dihydro- $\alpha$ -santonin, 4,5-Dihydro- $\alpha$ -santonin, 3,4-Epoxy- $\alpha$ -santonin