Separation of lycopene isomers by selective inclusion in deoxycholic acid.

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Deoxycholic acid (3α, 12α dihydroxy-5βcolan-24-oic-acid, DCA) is a commonly known bile acid with the ability to form inclusion complexes with a variety of chemical compounds. Selective inclusion of all trans lycopene isomer from the mixture of all-trans and cis isomers by deoxycholic acid was studied.
Heterogeneous mixture of isomerized tomato oleoresin containing 54% trans, 48% cis lycopene isomers and deoxycholic acid in dichloromethane was incubated at 25°C for 2h. Lycopene with 99.69% all trans isomer was recovered after washing the mixture with ether, hexane and ethanol/alkaline solutions. The process can be used for isolation of all trans lycopene from other carotenoids and cis lycopene isomers.