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In vitro inhibition of α-carbonic anhydrase isozymes by some phenolic compounds

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abstract

Carbonic anhydrase inhibitors (CAIs) are a class of pharmaceuticals used as antiglaucoma agents, diuret-ics, antiepileptics, in the management of mountain sickness, gastric and duodenal ulcers, neurological disorders or osteoporosis. We report here the inhibitory capacities of some phenolic compounds against three human CA isozymes (hCA I, hCA II, and hCA VI) and the gill carbonic anhydrase of the teleost fish Dicentrarchus labrax (European seabass) (dCA). The isozymes showed quite diverse inhibition profiles with these compounds. These data may lead to design novel CAIs with a diverse inhibition mechanism compared to sulfonamide/sulfamate inhibitors.