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Hydrolysis of iodothyronine conjugates by intestinal bacteria.

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Abstract

Glucuronide and sulfate conjugation are important pathways in the peripheral metabolism of thyroid hormone. These reactions occur predominantly in the liver, and especially the glucuronides are excreted in the bile. Although an enterohepatic circulation after intestinal hydrolysis of iodothyronine conjugates is suggested by several authors, substantial proof has not been presented so far. In the present paper experimental work from our group is reviewed. The studies showed that fecal suspensions of human or rat origin hydrolysed iodothyronine conjugates, whereas oral administration of antibiotics to rats strongly reduced this capacity. Obligately anaerobic intestinal bacteria were found to be responsible for the hydrolysis and several species belonging to the major residents of the intestinal flora of man and rat could be isolated and identified. Recent studies with conventional and decontaminated rats produced strong support for the existence of an enterohepatic circulation of thyroid hormone. Our findings are discussed in connection with other relevant studies on this subject.

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