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Deuterated 3-Methylhistidine

National Cancer Institute

Source

National Cancer Institute. *Deuterated 3-Methylhistidine*. NCI Thesaurus. Code C91391.

A derivative of the amino acid histidine labeled with heavy hydrogen (D) used in diagnostic procedures. Upon intake of deuterated 3-methylhistidine (3-MH), this agent is incorporated into muscle protein and then is subsequently excreted unchanged in the urine. By measuring the amount of 3-MH in the urine, via analysis of deuterium, the rate of protein muscle catabolism can be determined and the risk of skeletal muscle atrophy or cachexia can be assessed. 3-methylhistidine is a myofibrillar-specific amino acid and is mainly found in muscle myosin and actin; proteolysis of myofibrils releases 3-MH that is excreted unchanged in the urine.