

Digestion and Metabolism of Cetylated Fatty Acids in Rats.

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Cetylated fatty acids (CFA) are fatty acids esterified to cetyl alcohol found in small amounts in ruminant fat. Diehl & May (J Pharm Sci 83:296, 1974) reported that rats injected with CFA showed great resistance to adjuvant-induced arthritis. Recently, osteoarthritis patients given CFA showed significant improvement in quality of life outcomes (FASEB J 15:A265, 2001). Currently there is no information regarding absorption or metabolism of CFA. This study examined the resistance to digestion of CFA. In vitro, neither pancreatic lipase nor low pH hydrolyzed CFA. Rats adapted to a purified diet were fed meals containing either 2% CFA or no CFA. Two hours later, stomach and small intestine contents were collected and the intestinal mucosa scrapped. Lipids were extracted, separated by TLC, and hydrolysis evaluated by the presence of cetyl alcohol. In rats fed a meal without CFA, no cetyl alcohol or CFA was found in any sample. In CFA-fed rats, no cetyl alcohol was found in the stomach or intestinal contents or in the mucosa, indicating no hydrolysis. CFA was found within the mucosa, demonstrating absorption. Thus, CFA resists digestion and is absorbed intact. (Supported by Imagenetix Inc.)