Biochemistry, molecular biology, and pharmacology of fatty acid synthase, an emerging therapeutic target and diagnosis/prognosis marker.


Source

Department of Pharmacology and Toxicology and IU Simon Cancer Center, Indiana University School of Medicine, Indianapolis, IN 46202.

Abstract

Human fatty acid synthase (FASN) is a 270-kDa cytosolic dimeric enzyme that is responsible for palmitate synthesis. FASN is slowly emerging and rediscovered as a marker for diagnosis and prognosis of human cancers. Recent studies showed that FASN is an oncogene and inhibition of FASN effectively and selectively kill cancer cells. With recent publications of the FASN crystal structure and the new development of FASN inhibitors, targeting FASN opens a new window of opportunity for metabolically combating cancers. In this article, we will review critically the recent progresses in understanding the structure, function, and the role of FASN in cancers and pharmacologically targeting FASN for human cancer treatment.

PMID:

20706604