Fatty acid synthase (FAS) is an enzyme that in humans is encoded by the FASN gene.

Fatty acid synthase is a multi-enzyme protein that catalyzes fatty acid synthesis. It is not a single enzyme but a whole enzymatic system composed of two identical 272 kDa multifunctional polypeptides, in which substrates are handed from one functional domain to the next.

Its main function is to catalyze the synthesis of palmitate (C16:0, a long-chain saturated fatty acid) from acetyl-CoA and malonyl-CoA, in the presence of NADPH.

The combination of metformin and TMZ was superior to monotherapy using metformin or TMZ in terms of cell viability in vitro and survival in vivo. The combination of high-dose metformin and TMZ inhibited FASN expression in an orthotopic model. Inhibition of fatty acid synthase (FASN) might be a potential therapeutic target of GBM. [1)].

1)
Lee JE, Lim JH, Hong YK, Yang SH. High-Dose Metformin Plus Temozolomide Shows Increased Anti-tumor Effects in Glioblastoma In Vitro and In Vivo Compared with Monotherapy. Cancer Res Treat. 2018 Jan 10. doi: 10.4143/crt.2017.466. [Epub ahead of print] PubMed PMID: 29334602.