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# Thymidylate Synthase

National Cancer Institute

## Source

National Cancer Institute. *Thymidylate Synthase*. NCI Thesaurus. Code C17199.

Thymidylate synthetase protein (312 aa, ~36 kDa) is encoded by the human TYMS gene. The protein is a conserved transferase enzyme that catalyzes methylene tetrahydrofolate (MTHF)/dUMP conversion to dihydrofolate/dTMP in thymidine triphosphate/deoxyribonucleotide biosynthesis. Thymidylate synthetase competes with the methylene tetrahydrofolate receptor for MTHF and maintains the dTMP pool for DNA replication and repair.