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Topoisomerase II

National Cancer Institute

Source

National Cancer Institute. *Topoisomerase II*. NCI Thesaurus. Code C18434.

Topoisomerase II catalyzes relaxation of supercoiled DNA molecules, catenation, decatenation, knotting, and unknotting of circular DNA. The topoisomerase II reaction appears to involve crossing-over of two DNA segments. Human cells contain two topoisomerase II isozymes: alpha and beta from distinct genes. DNA topoisomerase II alpha is associated with the Pol II holoenzyme and is required for chromatin-dependent co-activation. Transcription results in superhelical tension; topoisomerase II relaxation activity is essential for productive RNA synthesis on nucleosomal DNA. (from OMIM 126430 and NCI)