



DNA Ligase I (h): 293T Lysate: sc-111712

BACKGROUND

DNA Ligase I maintains the major DNA Ligase activity in proliferating cells by joining Okazaki fragments during lagging strand DNA replication. Human DNA Ligase I also has an essential role in DNA repair pathways, where it catalyzes the formation of phosphodiester bonds between adjacent 5' phosphoryl and 3' hydroxy-termini at single breaks in duplex DNA molecules. In addition, DNA Ligase I plays a role in sealing nicks during excision repair. Similar to other DNA ligases, DNA Ligase I is built around a common catalytic core. Increased levels of DNA Ligase I are found in human tumors, as compared to benign tissues, as well as in peripheral blood lymphocytes. Furthermore, DNA Ligase I antisense ODN's may decrease tumor cell proliferation, suggesting a potential role for DNA Ligase I as an anti-cancer agent. DNA Ligase I activity is altered in the chromosomal breakage deficit Bloom's syndrome (BS). Individuals with BS either have decreased levels of abnormally thermolabile DNA Ligase I or possess a dimeric form of this enzyme.

REFERENCES

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3. Barnes, D.E., Tomkinson, A.E., Lehmann, A.R., Webster, A.D. and Lindahl, T. 1992. Mutations in the DNA Ligase I gene of an individual with immunodeficiencies and cellular hypersensitivity to DNA-damaging agents. Cell 69: 495-503.
4. Timson, D.J., Singleton, M.R. and Wigley, D.B. 2000. DNA Ligases in the repair and replication of DNA. Mutat. Res. 460: 301-318.
5. Sun, D., Urrabaz, R., Nguyen, M., Marty, J., Stringer, S., Cruz, E., Medina-Gundrum, L. and Weitman, S. 2001. Elevated expression of DNA Ligase I in human cancers. Clin. Cancer Res. 7: 4143-4148.
6. Tom, S., Henriksen, L.A., Park, M.S. and Bambara, R.A. 2001. DNA Ligase I and proliferating cell nuclear antigen form a functional complex. J. Biol. Chem. 276: 24817-24825.

CHROMOSOMAL LOCATION

Genetic locus: LIG1 (human) mapping to 19q13.33.

PRODUCT

DNA Ligase I (h): 293T Lysate represents a lysate of human DNA Ligase I transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

DNA Ligase I (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive DNA Ligase I antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.