Recombinant Escherichia coli gyrA Protein (S2-A523)

Cat. No. gyrA-1448E **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Escherichia coli (G)-gyrA(S2-A523) protein without tag was expressed in E. coli
Species	E.coli
Source	E.coli
ProteinLength	S2-A523
Description	A type II topoisomerase that negatively supercoils closed circular double-stranded (ds) DNA in an ATP-dependent manner to maintain chromosomes in an underwound state. This makes better substrates for topoisomerase IV (ParC and ParE) which is the main enzyme that unlinks newly replicated chromosomes in E.coli. Gyrase catalyzes the interconversion of other topological isomers of dsDNA rings, including catenanes. Relaxes negatively supercoiled DNA in an ATP-independent manner (E.coli gyrase has higher supercoiling activity than many other bacterial gyrases; at comparable concentrations E.coli gyrase introduces more supercoils faster than M.tuberculosis gyrase, while M.tuberculosis gyrase has higher decatenation than supercoiling activity compared to E.coli. E.coli makes 15% more negative supercoils in pBR322 plasmid DNA than S.typhimurium; the S.typhimurium GyrB subunit is toxic in E.coli, while the E.coli copy can be expressed in S.typhimurium even though the 2 subunits have 777/804 residues identical. The enzymatic differences between E.coli gyrase and topoisomerase IV are largely due to the GyrA C-terminal domain (approximately residues 524-841) and specifically the GyrA-box.

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Form	Liquid
Endotoxin	< 0.01 EU/μg of the protein
Purity	90%
Stability	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Storage Buffer	Supplied as sterile 50 mM Tris-HCl (pH7.5), 200 mM NaCl, 20% glycerol
Shipping	It is shipped out with blue ice.

GENE INFORMATION

Gene Name	gyrA DNA gyrase subunit A [Escherichia coli str. K-12 substr. MG1655]
Official Symbol	gyrA
Synonyms	gyrA; DNA gyrase subunit A; ECK2223; hisW; nalA; nfxA; norA; parD; DNA gyrase subunit A; EC 5.6.2.2
Gene ID	946614
Protein Refseq	NP_416734
UniProt ID	P0AES4

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