Rad51, His-Tag Recombinant

Catalog: 102050
Lot: 240104-G

Product Information

Description:	Recombinant human Rad51, transcript 1, full length encompassing amino acids 2-339(end). This construct contains an N-terminal His-tag (6xHis). This protein was affinity purified.
Background:	Rad51 (Radiation sensitive protein 51) is an ATP-dependent DNA repair protein with recombinase activity. It assembles on single-stranded DNA (ssDNA) as an oligomeric nucleoprotein filament where it starts by displacing RPA complexes in concert with Rad51 mediators. These mediators include BRCA1 (breast cancer type 1), BRCA2 and PALB2 (partner and localizer of BRCA2), and they accelerate the recruitment and nucleation of Rad51 to the RPA-coated ssDNA. The Rad51 filaments do homology search and strand invasion, allowing for DNA repair to occur. Mutations in Rad51 correlate with cancer predisposition. Rad51 expression is elevated in many cancer types, which may be a compensatory mechanism for cells trying to deal with a high level of DNA damage. Rad51 overexpression in cancer cells contributes to the onset of resistance to DNA-damaging agents such as the ones used in cancer treatment. The use of Rad51 inhibitors targeting Rad51 function or interaction with other proteins may prove beneficial in oncology as DNA-damage sensitizing agents.
Species:	Human
Construct:	Rad51 (His-2-339(end))
Concentration:	0.21 mg/ml
Expression System:	*E. coli*
Purity:	≥90%
Format:	Aqueous buffer solution.
Formulated In:	40 mM Tris-HCl, pH 8.0, 110 mM NaCl, 2.2 mM KCl, 20% glycerol, and 3 mM DTT
MW:	38 kDa
Genbank Accession:	NM_002875.5
Stability:	At least 6 months at -80°C.
Storage:	-80°C
Instructions for Use:	Thaw on ice and gently mix prior to use. DO NOT VORTEX. Perform a quick spin before opening. Aliquot into small volumes and flash freeze for long term storage. Avoid multiple freeze/thaw cycles.
Assay Conditions:	Various amounts of Rad51 were preincubated with 3 µl of DNA substrate for 10 minutes at 37°C. The reaction was started by adding 2 µl of ATP (final concentration 1 mM). After incubation for 1 hour at 37°C, the released phosphate was quenched by the addition of 100 µl of Biomol Green reagent. Absorbance was measured at λ=620 nm using a M1000 Tecan plate reader set up in kinetic mode (endpoint reading at 15 minutes).
Applications:	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

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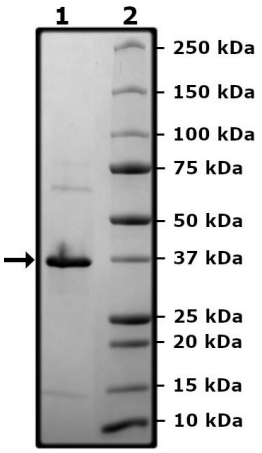
Quality Control Data

4-20% SDS-PAGE Coomassie Staining



Rad51 Activity