

## Active Recombinant Human RAD51

Cat. No. RAD51-1121H Lot. No. (See product label)

### SPECIFICATION

**Species** Human

**Source** E.coli

**Description**


Properly controlled recombination between homologous DNA molecules (Homologous Recombination -HR) is essential for the maintenance of genome stability and for the prevention of tumorigenesis. Rad51 is a mammalian homologue of yeast RAD51 and bacterial RecA and, like its counterparts, plays a central role in HR. Rad51 coats ssDNA to form a nucleoprotein filament that invades and pairs with a homologous region in duplex DNA. It can then activate strand exchange to generate a crossover between the juxtaposed DNA molecules. In addition to Rad51, these steps require the coordinated action of a number of other homologous-recombination proteins, including the RP-A protein, which binds single-stranded DNA, Rad52, which can bind DNA ends, anneal complementary single-stranded DNA molecules and enhance the specificity of RAD51, and a number of Rad51 paralogs. The tumour-suppressor proteins BRCA1 and BRCA2 colocalize with RAD51 in DNA-damage-induced nuclear foci. BRCA2 has been shown to interact directly with RAD51 and thus plays a direct role in repair by HR, through control of the availability and function of the central mediator, Rad51. Recombinant RAD51 was expressed in a strain of E.coli and purified by an affinity column in combination with FPLC chromatography.

**Form**

Liquid. Supplied in 20 mM Tris-HCl pH 8.0, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT and 20% glycerol.

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|                    |   |
|--------------------|---|
| <b>Purity</b>      | ≥95% by SDS-PAGE.   |
| <b>Application</b> | RAD51 has been applied in DNA and protein-protein interaction assays.   |
| <b>Activity</b>    | 20 ng are sufficient for a DNA-protein assay and 100 ng are sufficient for a protein-protein interaction assay. |
| <b>Usage</b>       | For in vitro use only.  |
| <b>Storage</b>     | Quality guaranteed for 12 months store at -80°C. Avoid freeze / thaw cycles.                                    |

## GENE INFORMATION

|                       |  |
|-----------------------|--|
| <b>Gene Name</b>      | <a href="#">RAD51 RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae) [ Homo sapiens ]</a>   |
| <b>Synonyms</b>       | RAD51; RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae); RECA; BRCC5; HRAD51; RAD51A; HsRad51; HsT16930; RAD51 homolog protein; RecA-like protein; RAD51D; recombination protein A; RecA, E. coli, homolog of DNA repair protein RAD51 homolog 1; BRCA1/BRCA2-containing complex, subunit 5; RAD51L3; hRAD51; RAD51 (S. cerevisiae) homolog (E coli RecA homolog) |
| <b>Gene ID</b>        | <a href="#">5888</a>   |
| <b>mRNA Refseq</b>    | <a href="#">NM_002875</a>  |
| <b>Protein Refseq</b> | <a href="#">NP_002866</a>  |
| <b>MIM</b>            | <a href="#">179617</a>   |
| <b>UniProt ID</b>     | <a href="#">Q06609</a>   |

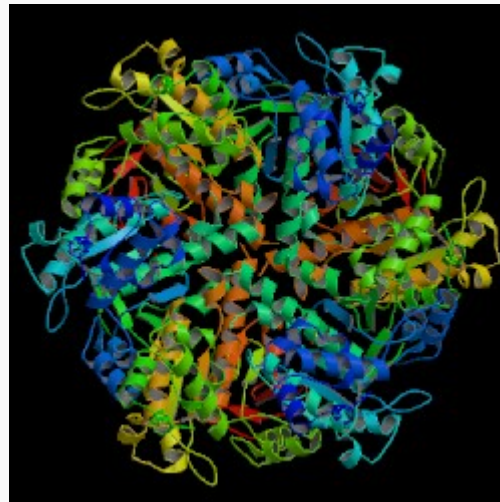
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|                            |  |
|----------------------------|--|
| <b>Chromosome Location</b> | 15q15  |
| <b>Pathway</b>             | Homologous recombination; Pancreatic cancer; Pathways in cancer  |
| <b>Function</b>            | ATP binding; damaged DNA binding; double-stranded DNA binding; identical protein binding; nucleoside-triphosphatase activity; nucleotide binding; protein C-terminus binding; single-stranded DNA binding; single-stranded DNA-dependent ATPase activity |

**A filament of Rad51 based on PDB.**



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