

RAD51

RecA-like protein, recombination repair protein
human, recombinant, *E. coli*

Cat. No.	Amount
PR-808	10 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -80°C

Avoid freeze / thaw cycles

Form

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

Activity

20 ng are sufficient for a DNA-protein assay and 100 ng are sufficient for a protein-protein interaction assay.

Application

RAD51 has been applied in DNA and protein-protein interaction assays.

Molecular Weight

40 kDa

Purity

> 95% by SDS-PAGE

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.

Selected References:

- Modesti *et al.* (2001) Homologous recombination: from model organisms to human disease. *Genome Biol.* **2**:1014.1.
Davies *et al.* (2001) Role of BRCA2 in control of the RAD51 recombination and DNA repair protein. *Mol. Cell.* **7**:273.