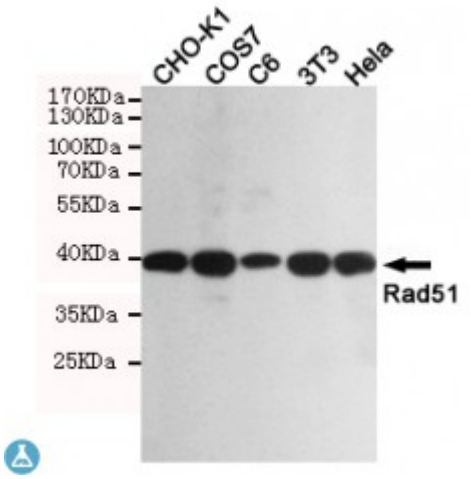
Anti-Rad51 antibody



Description	Rad51 is a protein encoded by the RAD51 gene which is approximately 35 kDa. Rad51 is localised to the nucleus, cytoplasm and mitochondrion matirx. It is involved in the resolution of D-loop structures through synthesis-dependent strand annealing, DNA double-strand break repair, ATM pathway and the BRCA1 pathway. It is known to be involved in the homologous strand exchange, a key step in DNA repair through homologous recombination and repair of DNA. It catalyses the recognition of homology and strand exchange between homologous DNA partners to form a joint molecule between a processed DNA break and the repair template. Rad51 is highly expressed in the testis and thymus and less expressed in the small intestine, placenta, colon, pancreas and ovary. Mutations in the RAD51 gene result in breast cancer and Fanconi anemia, a disorder affecting all bone marrow elements. STJ99103 was developed from clone 4H10-G5-H4. It was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen and detects endogenous levels of Rad51 and does not cross-react with related proteins.

Model	STJ99103
Host	Mouse
Reactivity	Human, Mouse, Rat, Simian
Applications	ELISA, WB
Immunogen	Recombinant peptide derived from human Rad51.
Gene ID	5888
Gene Symbol	RAD51
Dilution range	WB 1:500-2000ELISA 1:10000-20000

Specificity	This antibody detects endogenous levels of Rad51 and does not cross-react with related proteins.
Tissue Specificity	Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Clone ID	4H10-G5-H4
Note	For Research Use Only (RUO).
Protein Name	DNA repair protein RAD51 homolog 1 HsRAD51 hRAD51 RAD51 homolog A
Molecular Weight	37kDa
Clonality	Monoclonal
Conjugation	Unconjugated
Isotype	IgG2a
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:9817OMIM:114480
Alternative Names	DNA repair protein RAD51 homolog 1 HsRAD51 hRAD51 RAD51 homolog A
Function	Plays an important role in homologous strand exchange, a key step in DNA repair through homologous recombination (HR). Binds to single and double-stranded DNA and exhibits DNA-dependent ATPase activity. Catalyzes the recognition of homology and strand exchange between homologous DNA partners to form a joint molecule between a processed DNA break and the repair template. Binds to single-stranded DNA in an ATP-dependent manner to form nucleoprotein filaments which are essential for the homology search and strand exchange . Part of a PALB2-scaffolded HR complex containing BRCA2 and RAD51C and which is thought to play a role in DNA repair by HR. Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3. Also involved in interstrand cross-link repair .
Sequence and Domain Family	The nuclear localization may reside in the C-terminus (between 259 and 339 AA).
Cellular Localization	Nucleus Cytoplasm Cytoplasm, perinuclear region. Mitochondrion matrix Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Colocalizes with RAD51AP1 and RPA2 to multiple nuclear foci upon induction of DNA damage. DNA damage induces an increase in nuclear levels. Together with FIGNL1, redistributed in discrete nuclear DNA damage-induced foci after ionizing radiation (IR) or camptothecin (CPT) treatment. Accumulated at sites of DNA damage in a SPIDR-dependent manner.
Post-translational Modifications	Ubiquitinated by the SCF(FBXO18) E3 ubiquitin ligase complex, regulating RAD51 subcellular location and preventing its association with DNA.

Phosphorylated. Phosphorylation of Thr-309 by CHEK1 may enhance association with chromatin at sites of DNA damage and promote DNA repair by homologous recombination. Phosphorylation by ABL1 inhibits function.