

**XRCC1 (X-Ray Repair Cross Complementing Protein1) Ab-3 (Clone 144)****Mouse Monoclonal Antibody****Cat. #MS-1393-P0, -P1, or -P (0.1ml, 0.5ml, or 1.0ml at 200µg/ml)** (Purified Ab with BSA and Azide)**Cat. #MS-1393-P1ABX or -PABX (0.1ml or 0.2ml at 1.0mg/ml)** (Purified Ab without BSA and Azide)**Cat. #MS-1393-R7 (7.0ml)** (Ready-to-Use for Immunohistochemical Staining)**Cat. #MS-1393-PCS (5 Slides)** (Positive Control for Histology)**Cat. #MS-1393-PCL (0.1ml)** (Positive Control for Western Blot)

Please note this data sheet has been changed effective December 9, 2011

**Description** X-Ray Repair Cross Complementing (XRCC1) plays a role in excision repair of DNA after ionizing irradiation. XRCC1 binds to DNA ligase III through the C-terminal 96 amino acids and to DNA polymerase beta through the N-terminal half. In testis XRCC1 is expressed at high levels. Cells with a mutation of this gene exhibit decreased single strand break repair and reduced recombination repair. They show increased double strand breaks, and sister chromatid exchange is increased up to 10-fold. The XRCC1 might serve as a scaffold protein during base excision-repair.

**Mol. Wt. of Antigen:** 85kDa**Epitope:** Not determined**Species Reactivity:** Human. Others-not known.**Clone Designation:** 144**Ig Isotype / Light Chain:** IgG<sub>2a</sub> / κ**Immunogen:** Recombinant human XRCC1 protein.**Applications and Suggested Dilutions:**

- Immunoprecipitation (Denatured verified)  
(Use Protein A) (Ab 2µg/mg protein lysate)
- Western Blotting (Ab 1-2µg/ml for 2hrs at RT)  
Immunohistology (formalin/paraffin)  
(Use Ab at 1:100 - 1:400 for 20 min at RT, using LP system)

\* [Staining of formalin-fixed tissues REQUIRES boiling tissue sections in 10mM citrate buffer, pH 6.0, (**NEOMARKERS'** Cat. #AP-9003), for 10-20 min followed by cooling at RT for 20 min.]

The optimal dilution for a specific application should be determined by the investigator.

**Positive Control:** Ls174T, or HeLa cells. Normal testis.**Cellular Localization:** Nuclear**Storage and Stability:**

Ab with sodium azide is stable for 24 months when stored at 2-8°C. Antibody WITHOUT sodium azide is stable for 36 months when stored at below 0°C.

**Supplied As:**

200µg/ml of antibody purified from ascites fluid by Protein A chromatography. Prepared in 10mM PBS, pH 7.4, with 0.2% BSA and 0.09% sodium azide. Also available without BSA and azide at 1mg/ml,

or

Prediluted antibody which is ready-to-use for staining of formalin-fixed, paraffin-embedded tissues.

**Suggested References:**

1. Cappelli E; et al. J Bio Chem, 1997, 272:23970-5.
2. Labudova O; et al. Pediatric Research, 1997, 41:435-9.

**Limitations and Warranty:**

Our products are intended FOR RESEARCH USE ONLY and are not approved for clinical diagnosis, drug use or therapeutic procedures. No products are to be construed as a recommendation for use in violation of any patents. We make no representations, warranties or assurances as to the accuracy or completeness of information provided on our data sheets and website. Our warranty is limited to the actual price paid for the product. NeoMarkers is not liable for any property damage, personal injury, time or effort or economic loss caused by our products.

**Material Safety Data:**

This product is not licensed or approved for administration to humans or to animals other than the experimental animals. Standard Laboratory Practices should be followed when handling this material. The chemical, physical, and toxicological properties of this material have not been thoroughly investigated. Appropriate measures should be taken to avoid skin and eye contact, inhalation, and ingestion. The material contains 0.09% sodium azide as a preservative. Although the quantity of azide is very small, appropriate care should be taken when handling this material as indicated above. The National Institute of Occupational Safety and Health has issued a bulletin citing the potential explosion hazard due to the reaction of sodium azide with copper, lead, brass, or solder in the plumbing systems. Sodium azide forms hydrazoic acid in acidic conditions and



## **XRCC1 (X-Ray Repair Cross Complementing Protein1) Ab-3 (Clone 144)**

### Mouse Monoclonal Antibody

Cat. #MS-1393-P0, -P1, or -P (0.1ml, 0.5ml, or 1.0ml at 200µg/ml) (Purified Ab with BSA and Azide)

Cat. #MS-1393-P1ABX or -PABX (0.1ml or 0.2ml at 1.0mg/ml) (Purified Ab without BSA and Azide)

Cat. #MS-1393-R7 (7.0ml) (Ready-to-Use for Immunohistochemical Staining)

Cat. #MS-1393-PCS (5 Slides) (Positive Control for Histology)

Cat. #MS-1393-PCL (0.1ml) (Positive Control for Western Blot)

Please note this data sheet has been changed effective December 9, 2011

should be discarded in a large volume of running water to avoid deposits forming in metal drainage pipes.

### *For Research Use Only*

#### **Additional Suggested References:**

- Nash RA; Caldecott KW; Barnes DE; Lindahl T. XRCC1 protein interacts with one of two distinct forms of DNA ligase III. *Biochemistry*, 1997, 36(17):5207-11.
- Andersson BS; Sadeghi T; Siciliano MJ; Legerski R; Murray D. Nucleotide excision repair genes as determinants of cellular sensitivity to cyclophosphamide analogs. *Cancer Chemotherapy and Pharmacology*, 1996, 38(5):406-16.
- Caldecott KW; Aoufouchi S; Johnson P; Shall S. XRCC1 polypeptide interacts with DNA polymerase beta and possibly poly (ADP-ribose) polymerase, and DNA ligase III is a novel molecular 'nick-sensor' in vitro. *Nucleic Acids Research*, 1996, 24:4387-94.
- Kubota Y; Nash RA; Klungland A; Schar P; Barnes DE; Lindahl T. Reconstitution of DNA base excision-repair with purified human proteins: interaction between DNA polymerase beta and the XRCC1 protein. *Embo Journal*, 1996, 15:6662-70.
- Walter CA; Trolan DA; McFarland MB; Street KA; Gurram GR; McCarrey JR. Xrcc-1 expression during male meiosis in the mouse. *Biology of Reproduction*, 1996 Sep, 55(3):630-5.
- Caldecott KW; Tucker JD; Stanker LH; Thompson LH. Characterization of the XRCC1-DNA ligase III complex in vitro and its absence from mutant hamster cells. *Nucleic Acids Research*, 1995, 23(23):4836-43.
- Lamerdin JE; Montgomery MA; Stilwagen SA; Scheidecker LK; Tebbs RS; Brookman KW; Thompson LH; Carrano AV. Genomic sequence comparison of the human and mouse XRCC1 DNA repair gene regions. *Genomics*, 1995, 25(2):547-54.
- Wei YF; Robins P; Carter K; Caldecott K; Pappin DJ; Yu GL; Wang RP; Shell BK; Nash RA; Schar P; et al. Molecular cloning and expression of human cDNAs encoding a novel DNA ligase IV and DNA ligase III, an enzyme active in DNA repair and recombination. *Molecular and Cellular Biology*, 1995, 15(6):3206-16.
- Zhou ZQ; Walter CA. Expression of the DNA repair gene XRCC1 in baboon tissues. *Mutation Research*, 1995 Nov, 348(3):111-6.
- Brookman KW; Tebbs RS; Allen SA; Tucker JD; Swiger RR; Lamerdin JE; Carrano AV; Thompson LH. Isolation and characterization of mouse Xrcc-1, a DNA repair gene affecting ligation. *Genomics*, 1994 Jul 1, 22(1):180-8.
- Caldecott KW; McKeown CK; Tucker JD; Ljungquist S; Thompson LH. An interaction between the mammalian DNA repair protein XRCC1 and DNA ligase III. *Molecular and Cellular Biology*, 1994, 14(1):68-76.
- Caldecott KW; Thompson LH. Partial correction of the single-strand break repair defect in the CHO mutant EM9 by electroporated recombinant XRCC1 protein. *Annals of the New York Academy of Sciences*, 1994 Jul 29, 726:336-9.
- Ljungquist S; Kenne K; Olsson L; Sandstrom M. Altered DNA ligase III activity in the CHO EM9 mutant. *Mutation Research*, 1994, 314(2):177-86.
- Shung B; Miyakoshi J; Takebe H. X-ray-induced transcriptional activation of c-myc and XRCC1 genes in ataxia telangiectasia cells. *Mutation Research*, 1994, 307(1):43-51.
- Walter CA; Lu J; Bhakta M; Zhou ZQ; Thompson LH; McCarrey JR. Testis and somatic Xrcc-1 DNA repair gene expression. *Somatic Cell and Molecular Genetics*, 1994, 20(6):451-61.



---

**XRCC1 (X-Ray Repair Cross Complementing Protein1) Ab-3 (Clone 144)**

Mouse Monoclonal Antibody

Cat. #MS-1393-P0, -P1, or -P (0.1ml, 0.5ml, or 1.0ml at 200µg/ml) (Purified Ab with BSA and Azide)

Cat. #MS-1393-P1ABX or -PABX (0.1ml or 0.2ml at 1.0mg/ml) (Purified Ab without BSA and Azide)

Cat. #MS-1393-R7 (7.0ml) (Ready-to-Use for Immunohistochemical Staining)

Cat. #MS-1393-PCS (5 Slides) (Positive Control for Histology)

Cat. #MS-1393-PCL (0.1ml) (Positive Control for Western Blot)

Please note this data sheet has been changed effective December 9, 2011

16. Lehmann AR. Duplicated region of sequence similarity to the human XRCC1 DNA repair gene in the Schizosaccharomyces pombe rad4/cut5 gene. Nucleic Acids Research, 1993, 21(22):5274.

