

## Product datasheet for **MG210341**

### **Xrcc5 (NM\_009533) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Xrcc5 (NM_009533) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Xrcc5
Synonyms:	AI314015; CTC85; CTCBF; Ku80; Ku86
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG210341 representing NM\_009533  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGGCGTGGTCCGGTAATAAGGCAGCTGTTGTGCTGTGTGGATGTGGGGTTGCCATGGTAACCTCT  
 TTCTGGTGAAGAATCTCCAATTGAACAAGCAAAGAAAGTGATGACTATGTTTGTCCAACGACAGGTATT  
 TTCGGAGAGCAAAGATGAGATTGCGTTAGTCCTCTATGGCACAGATGGCACTGATAATGCCCTTGCTGGC  
 AAGGACCAGTATCAGAACATCACAGTGTGCAGACACCTGATGCTACCAGATTTTGATTTGCTGGAAGACA  
 TCGGAAACAAAATCCAGCCAAGTCCCAGCAAGCCGACTTCTGGACGCCCTGATTGTGTGCATGGATTT  
 GATTCAGCGTGAACCATAGGGAAGAAGTTGGGAAGAAGCATATTGAAGTGTCCACTGACCTCAGCAGC  
 CCGTTCAGCCAGGACCACTGGACGTTAATTTGTAACCTGAAGAAGTCTGGCATCTCTCTGCAGTTCT  
 TTTTGCCTTTTCCAATCGACAAGAATGGCGAGCCTGGCGAGAGAGGGACCTGGACTCTGGCTTGACCA  
 CCTCAAACCTCCTTCCCTCAAAAAGGACTTACTGAGCAGCAAAAAGGACATCCGCATGGTGACAAGG  
 GTGATGCTGTCTTAGAAGGCGAAGACGGGCTGGATGAAATTTATTCCTTCAGTGAGAGTCTACGACAAC  
 TGTGCGTCTTTAAGAAGATTGAGAGGCGTTCATGCCCTGGCCCTGCCAACTGACCATTGGCCCCAACTT  
 GTCTATAAAGATTGTAGCCTATAAATCGATTGTACAGGAGAAATTAAGAAGAGTTGGGTAGTTGTGGAC  
 GCAAGAACGCTAAAGAAGGAAGATATACAAAAGAGACTGTTTATTGCCTAAATGACGATGATGAAACTG  
 AAGTTTCAAAGAGGACACTATTCAGGGTACCCTACGGAAGTGATATCATTCTTTTTCTAAAGTGGA  
 TGAGGAACAAATGAAATATAAATCTGAGGGGAAGTGCTTCTCTGTTTTGGGATTTGTAATCTTCTCAG  
 GTTCATAGAAGATTCTTCATGGGACATCAAGTTCTAAAGTCTTGCAGCAAAGGATGATGAGCGGCAG  
 CTGTTGCCCTTCTCTCGTTTCATGCTTTGGATGAGTTAAACATGGTCGCCATCGTCCGATATGCTTA  
 TGACAAAAGATCTAATCCTCAAGTTGGTGTAGCCTTCCCTTACATTAAGGACGCCTATGAGTGTTAGTT  
 TATGTGCAGCTGCCTTTCATGGAAGACTTGCGGCAATACATGTTTTCTCGCTGAAAAACAATAAGAAGT  
 GCACTCCACAGAGGCCAGCTGAGCGCTATTGATGATCTGATTGATTCCATGAGCTTGGTAAAGAAAAA  
 CGAGGAAGAAGACATTGTTGAAGATTTGTTTCAAACCTCCAAAATTCAAATCCTGAATTCAGCGATTG  
 TACCAGTGTCTGCTGCATAGAGCCTTACATCTCCAGGAGCGGCTGCCCCGATTCCAGCAGCACATTTTGA  
 ATATGCTGGATCCCCCACTGAGATGAAAGCAAATGTGAGAGTCCACTCTAAAGTAAAGACCTTTT  
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 GAGGGGCCGCTGCTAAAAAATAAAAAGTGAAGAAGAAGATCACATCAGCATCTCCAGCCTGGCAG  
 AAGGGAACATACCAAGGTTGGAAGTGTGAATCCTGTTGAAAACCTCCGTTTCTAGTAAGACAGAAGAT  
 TGCCAGCTTTGAGGAAGCGAGTCTCCAGTTAATAAGTCACATCGAACAATTTTTGGATACCAATGAAACA  
 CTGATTTTATGAAAAGTATGGACTGCATCAAAGCTTTCCGGGAGGAGGCCATTGATTTTCTGAGAAAC  
 AGCGCTTCAACAGCTTCTGGAAGCCCTTCGAGAGAAAGTGGAAATTAAGCAATTAATCATTCTGGGA  
 AATTGTTGTTGAGGATGGAGTACTCTGATCACCAAAGACGAAGGCCAGGAAGCTCTATCACAGCTGAG  
 GAAGCCACAAAGTTTCTGGCCCCAAAGACAAAAGCAAAGAAGATACAACGGGACCTGAAGAAGCTGGTG  
 ATGTGGATGATTTACTGGACATGATA

**ACGCGTACGCGGCCGCTCGAG** - GFP Tag - GTTTAA

**Protein Sequence:** >MG210341 representing NM\_009533  
Red=Cloning site Green=Tags(s)

```
MAWSGNKAAVVLCDVGVGAMGNSFPGEESPIEQAKKVMFMVQQRQVSESKEDEIALVLYGTDGTDNALAG
KDQYQNIIVCRHMLMPDFDLLEDIGNKIQPSSQQADFLDALIVCMDLIQRETIGKKFGKKHIEVFTLSS
PFSQDQLDVIICNLKKSIGISLQFFLPFPIDKNGEPGERGDLDSGLDHLKPSFPQKGLTEQQKEGIRMVTR
VMLSLEGEDGLDEIYFSSESLRQLCVFKKIERRSMPWPCQLTIGPNLSIKIVAYKSIVQEKFKKSWVVVD
ARTLKKEDIQKETVYCLNDDDETEVSKEDTIQGYRYGSDIIPFSKVDEEQMKYKSEGKCFSVLGFCKSSQ
VHRRFFMGHQVLKVFVAAKDDEAAAVALSSLVHALDELNMVAIVRYAYDKRSNPQVGAFFPYIKDAYECLV
YVQLPFMEDLRQYMFSSLKNNKCTPTEAQLSAIDDLIDSMSLVKKNEEEDIVEDLFPTSKIPNPEFQRL
YQCLLHRALHLQERLPPIQQHILNMLDPPTMKAACESPLSKVKTLPFTEVIKKKNQVTAQDVFDNHE
EGPAAKKYKTEKEEDHISISLAEGNITKVGSNPVENFRFLVRQKIASFEEASLQLISHIEQFLDNET
LYFMKSMDCIKAFREEAIQFSEEQRFNFLALREKVEIKQLNHFWEIVVDGVTLITKDEGPGSSITAE
EATKFLAPKDKAKEDTTGPEEAGDVEDLLDMI
```

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_009533

**ORF Size:** 2196 bp

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:** [NM\\_009533.2](#), [NP\\_033559.2](#)

**RefSeq Size:** 2571 bp

**RefSeq ORF:** 2199 bp

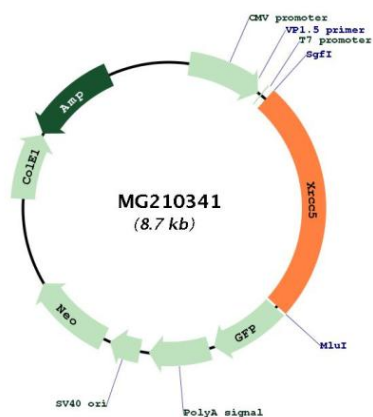
**Locus ID:** 22596

**UniProt ID:** [P27641](#)

**Cytogenetics:** 1 36.5 cM

**Gene Summary:** Single-stranded DNA-dependent ATP-dependent helicase. Has a role in chromosome translocation. The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner. It works in the 3'-5' direction. Binding to DNA may be mediated by XRCC6. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. The XRCC5/6 dimer acts as regulatory subunit of the DNA-dependent protein kinase complex DNA-PK by increasing the affinity of the catalytic subunit PRKDC to DNA by 100-fold. The XRCC5/6 dimer is probably involved in stabilizing broken DNA ends and bringing them together. The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step. In association with NAA15, the XRCC5/6 dimer binds to the osteocalcin promoter and activates osteocalcin expression. The XRCC5/6 dimer probably also acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), by catalyzing the beta-elimination of the 5' deoxyribose-5-phosphate at an abasic site near double-strand breaks. XRCC5 probably acts as the catalytic subunit of 5'-dRP activity, and allows to 'clean' the termini of abasic sites, a class of nucleotide damage commonly associated with strand breaks, before such broken ends can be joined. The XRCC5/6 dimer together with APEX1 acts as a negative regulator of transcription. Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway.[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MG210341