

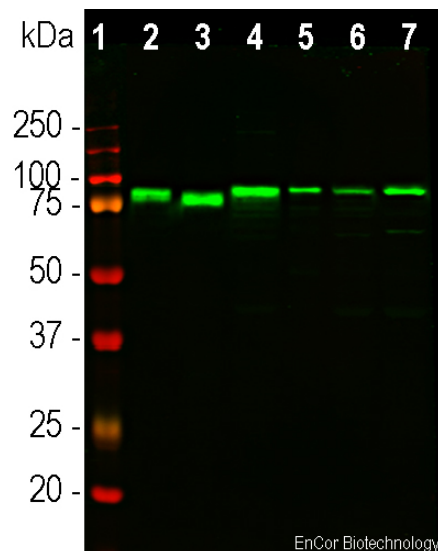
Ordering Information
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HGNC Name: EWSR1
UniProt: Q01844
RRID: AB_2572263
Immunogen: Full length human EWS expressed in and purified from *E. coli*.
Format: Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM Na₂S₂O₃
Storage: Store at 4°C for short term, for longer term at -20°C
Recommended dilutions:
WB: 1:1,000-1:2,000. IF/ICC 1:1,000. IHC not recommended

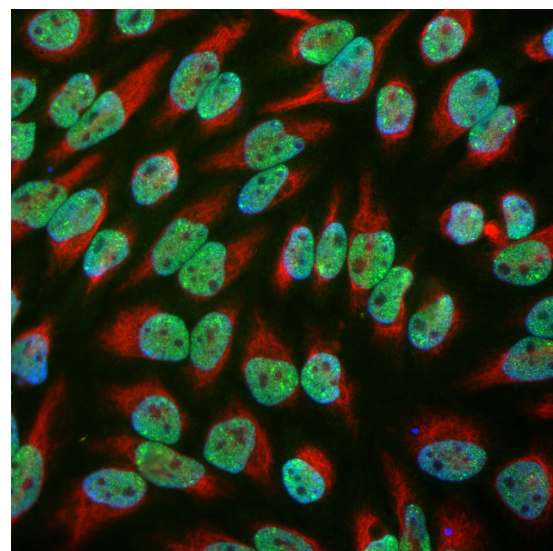
References:

1. Delattre O, et al. Gene fusion with an ETS DNA-binding domain caused by chromosome translocation in human tumours. *Nature* 359:162-5 (1992).
2. Zucman J, et al. Cloning and characterization of the Ewing's sarcoma and peripheral neuroepithelioma t(11:22) translocation breakpoints. *Genes Chrom. Canc.* 5:271-7 (1992).
3. Andersson MK, et al. The multifunctional FUS, EWS and TAF15 proto-oncoproteins show cell type-specific expression patterns and involvement in cell spreading and stress response. *BMC Cell Biol.* doi:10.1186/1471-2121-9-37 (2008).
4. Felsch JS, Lane WS, Peralta EG. Tyrosine kinase Pyk2 mediates G-protein-coupled receptor regulation of the Ewing sarcoma RNA-binding protein EWS. *Curr. Biol.* 9:485-8 (1999).
5. Belyanskaya LL, Delattre O, Gehring H. Expression and subcellular localization of Ewing sarcoma (EWS) protein is affected by the methylation process. *Exp. Cell Res.* 288:374-81 (2003).
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7. Couthouis J, et al. Evaluating the role of the FUS/TLS-related gene EWSR1 in amyotrophic lateral sclerosis. *Hum. Mol. Genet.* 21:2899-911 (2012).
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Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC	Mouse	IgG2b	~80kDa by SDS-PAGE	Hu, Do, Ho, Rt, Ms



Western blot analysis of different cell lines lysates using mouse mAb to EWS, MCA-5H7, dilution 1:1,000 in green: [1] protein standard (red), [2] HeLa, [3] HEK293, [4] mouse NIH-3T3, [5] rat PC12, [6] equine NBL6 and [7] canine A72 cells. The strong band at ~80kDa corresponds to the EWS protein seen in all species tested.



An image of a HeLa cell cultures stained with antibody MCA-5H7 (green) to EWS and counterstained with chicken antibody to vimentin CPCA-Vim, (red). Blue is the Hoechst DNA stain. The EWS protein is clearly localized along with the DNA in the nucleus.

Background:

The **Ewing sarcoma** breakpoint region 1 gene **EWSR1**, was discovered as the name suggests as it is located at the breakpoint on human chromosome 22 which may becomes fused to segments of other chromosomes following chromoplexy, a burst of complex chromosomal rearrangement seen in cancer cells (1,2). The genetic rearrangement produces a set of aberrant genes consisting of the 5' of the **EWSR1** gene fused to gene segments of several different transcriptional regulator proteins, see the **OMIM EWS fusion genes** entry for details. The normal **EWSR1** gene encodes a protein, EWS RNA binding protein 1, containing an N-terminal transactivation domain followed by a single **RRM** domain and a single **Zinc Finger** domain of the **ZnF_RBZ** type. Chromoplexy results in the production of aberrant genes encoding the N-terminal EWS transactivation domain fused to DNA binding segments of various transcription factors, resulting in strong activation of transcription (3). EWS is an abundant, ubiquitous and multifunctional protein involved in regulating gene expression, cell division, RNA processing and transport. EWS is localized primarily in the nucleus of cells, but has also been found in the cytoplasm, and associated with the plasma membrane in a fashion regulated by the protein kinase **PYK2** (3,4). Expression of EWS in the various subcellular compartments is affected by the methylation state of its RNA-binding domain (5). EWS associates with and stabilizes microtubules, leading to cell cycle arrest (6). EWS, FUS/TLS and TAF15 are closely related proteins which form the FET protein family which evolved from a single ancestor by gene multiplication (3). All have been implicated in the etiology of some forms of **Amyotrophic Lateral Sclerosis** (ALS, 7). All three proteins are less closely related to another RNA binding protein TDP43, also implicated in the etiology of ALS (8).

The MCA-5H7 monoclonal antibody was raised against full length recombinant human EWS expressed in and purified from *E. coli*. It works well on western blots of tissue extracts, on cells in culture and for IF and ICC, but is not recommended for IHC. EnCor also supplies mouse monoclonal antibodies to the EWS related proteins TAF15 and TDP43, **MCA-4D71** and **MCA-3H8** respectively.

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Abbreviation Key:

mAb—Monoclonal Antibody **pAb**—Polyclonal Antibody **WB**—Western Blot **IF**—Immunofluorescence **ICC**—Immunocytochemistry
IHC—Immunohistochemistry **E**—ELISA **Hu**—Human **Mo**—Monkey **Do**—Dog **Rt**—Rat **Ms**—Mouse **Co**—Cow **Pi**—Pig **Ho**—Horse **Ch**—Chicken
Dr—*D. rerio* **Dm**—*D. melanogaster* **Sm**—*S. mutans* **Ce**—*C. elegans* **Sc**—*S. cerevisiae* **Sa**—*S. aureus* **Ec**—*E. coli*.