

# Anti-Human Sulf-2 monoclonal antibodies for research applications

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## INVENTION NOVELTY

This invention identifies novel mouse monoclonal antibodies that recognize both human and mouse Sulf-2, an enzyme that is overexpressed in many cancers.

## VALUE PROPOSITION

Heparan sulfate proteoglycans (HSPGs) are components of the extracellular matrix that bind to growth factors, such as VEGFs and FGFs, inhibiting interactions between these ligands and receptors. Sulf-2 is a secreted enzyme that removes 6-O-sulfation from HSPGs, causing the release of ligands and consequent activation of receptors and downstream signaling pathways involved in cell proliferation, angiogenesis, and metabolism. Sulf-2 is synthesized as a 125 kD pre-protein and is subsequently cleaved into 75 kD and 50 kD fragments, which are held together by disulfide bonds in the mature protein.

There is direct evidence that Sulf-2 drives tumorigenesis in non-small cell lung cancers, pancreatic cancers, hepatocellular carcinomas and glioblastomas. Sulf-2 is also overexpressed in breast cancer, pancreatic cancer, gastric cancer, head and neck cancer, kidney cancer, central nervous system neoplasms and multiple myeloma. Furthermore, Sulf-2 is known to regulate lipid metabolism and is overexpressed in mice with type 2 diabetes.

Given the importance of Sulf-2 in various diseases, improved research tools, such as the Sulf-2 antibodies described here, could greatly benefit biomedical research.

## TECHNOLOGY DESCRIPTION

Researchers at the University of California, San Francisco have developed two mouse monoclonal antibodies raised against the purified, recombinant 75 kd subunit of human Sulf-2 protein. Clones 8G1 and 5D5 have high affinities toward the 75 kD subunit of Sulf-2 as indicated by ELISA assays with half-max signals of 0.4 nM for both antibodies. 8G1 and 5D5 recognize human as well as mouse Sulf-2. Distinct from the previously commercialized anti-Sulf-2 antibody clone 2B41, 8G1 and 5D5 do not recognize the 50 kD subunit of Sulf-2. Furthermore, 8G1 and 5D5 do not cross-react with Sulf-1.

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## OTHER INFORMATION

### KEYWORDS

Sulf-2, Anti-human,  
  
monoclonal antibodies,  
  
Research tool

### CATEGORIZED AS

- ▶ **Materials & Chemicals**
- ▶ Biological
- ▶ **Medical**
- ▶ Disease: Cancer
- ▶ Research Tools

### RELATED CASES

2011-071-0, 2001-B96-0

APPLICATION

- ▶ Western Blotting
- ▶ Immunoprecipitation
- ▶ ELISA
- ▶ Flow Cytometry
- ▶ Immunohistochemistry on paraffin-embedded section

STAGE OF DEVELOPMENT

Fully developed as a research tool

RELATED MATERIALS

- ▶ [Lemjabbar-Alaoui, H. et al. Sulf-2, a heparan sulfate endosulfatase, promotes human lung carcinogenesis. Oncogene 29, 635-646, doi:10.1038/onc.2009.365 \(2010\).](#)

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