

OPLAH (E-6): sc-365027

BACKGROUND

The γ -glutamyl cycle involves a series of reactions that are necessary for the synthesis and metabolism of glutathione (GST), which is crucial for regulating amino acid transport. OPLAH [5-oxoprolinase (ATP-hydrolysing)], also known as OPLA, 5-oxo-L-prolinase, 5-Opase or DKFZp434H244OPLA, is an enzyme that plays an important role in the γ -glutamyl cycle by catalyzing the cleavage of 5-oxo-L-proline to form L-glutamate in a reaction coupled to the hydrolysis of ATP to ADP and inorganic phosphate. OPLAH is a 1,288 amino acid protein that exists as a homodimer and belongs to the oxoprolinase family. Expressed at highest levels in kidney, OPLAH has also been found at lower levels in lung, breast, colon and ovary. The gene encoding OPLAH maps to human chromosome 8, which consists of nearly 146 million base pairs, encodes over 800 genes and is associated with a variety of diseases and malignancies including schizophrenia, bipolar disorder, trisomy 8, Pfeiffer syndrome and congenital hypothyroidism.

REFERENCES

1. Srivenugopal, K.S. and Ali-Osman, F. 1997. Activity and distribution of the cysteine prodrug activating enzyme, 5-oxo-L-prolinase, in human normal and tumor tissues. *Cancer Lett.* 117: 105-111.
2. Chen, X., et al. 1998. Characterization of 5-oxo-L-prolinase in normal and tumor tissues of humans and rats: a potential new target for biochemical modulation of glutathione. *Clin. Cancer Res.* 4: 131-138.
3. Jäger, M. and Wolf, S. 1999. Localization of 5-oxo-L-prolinase mRNA in the murine choroid plexus by *in situ* hybridization. *Neurosci. Lett.* 274: 171-174.
4. Kashino, G., et al. 2001. Preferential expression of an intact WRN gene in Werner syndrome cell lines in which a normal chromosome 8 has been introduced. *Biochem. Biophys. Res. Commun.* 289: 111-115.
5. Selicorni, A., et al. 2002. Cytogenetic mapping of a novel locus for type II Waardenburg syndrome. *Hum. Genet.* 110: 64-67.
6. Watanabe, T., et al. 2004. Bovine 5-oxo-L-prolinase: simple assay method, purification, cDNA cloning, and detection of mRNA in the coronary artery. *Biol. Pharm. Bull.* 27: 288-294.

CHROMOSOMAL LOCATION

Genetic locus: OPLAH (human) mapping to 8q24.3; Oplah (mouse) mapping to 15 D3.

SOURCE

OPLAH (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 27-57 near the N-terminus of OPLAH of human origin.

PRODUCT

Each vial contains 200 μ g IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365027 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

OPLAH (E-6) is recommended for detection of OPLAH of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

OPLAH (E-6) is also recommended for detection of OPLAH in additional species, including canine.

Suitable for use as control antibody for OPLAH siRNA (h): sc-77750, OPLAH siRNA (m): sc-151309, OPLAH shRNA Plasmid (h): sc-77750-SH, OPLAH shRNA Plasmid (m): sc-151309-SH, OPLAH shRNA (h) Lentiviral Particles: sc-77750-V and OPLAH shRNA (m) Lentiviral Particles: sc-151309-V.

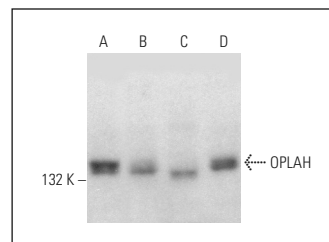
Molecular Weight of OPLAH: 137 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, HEK293 whole cell lysate: sc-45136 or F9 cell lysate: sc-2245.

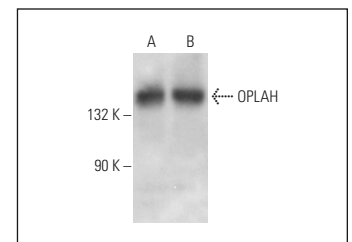
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



OPLAH (E-6): sc-365027. Western blot analysis of OPLAH expression in c4 (A), F9 (B), NIH/3T3 (C) and TK-1 (D) whole cell lysates.



OPLAH (E-6): sc-365027. Western blot analysis of OPLAH expression in HEK293 (A) and F9 (B) whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.