Data Sheet (Cat.No.TMPY-04460)

TargetMol

OXSR1 Protein, Human, Recombinant (GST)

General Information

Synonyms: OSR1;oxidative stress responsive 1

Protein Construction: A DNA sequence encoding the full length of human OXSR1 (NP_005100.1) (Met 1-Ser 527) was fused with the GST tag at the N-terminus. Predicted N terminal: Met

Species: Human

Expression Host: Baculovirus Insect Cells

Accession: O95747

Molecular Weight: 84 kDa (predicted); 80 kDa (reducing conditions)

QC Testing

Biological Activity: Kinase activity untested

Purity: > 88 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Supplied as sterile 50 mM Tris, 100 mM NaCl, pH 8.0, 0.5 mM GSH, 0.5 mM PMSF, 0.5 mM EDTA, 10% glycerol.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Oxidative stress-responsive 1 protein (OXSR1), also known as Serine/threonine-protein kinase OSR1, is a member of the Ser/Thr protein kinase family of proteins. OXSR1 regulates downstream kinases in response to environmental stress, and may play a role in regulating the actin cytoskeleton. OXSR1 is a 58 kDa protein of 527 amino acids that is widely expressed in mammalian tissues and cell lines. The amino acid (aa) sequence of the predicted OXSR1 protein is 39% identical to that of human SOK1. Of potential regulators surveyed, endogenous OXSR1 is activated only by osmotic stresses, notably sorbitol and to a lesser extent NaCl. OXSR1 did not increase the activity of coexpressed JNK, nor did it activate three other MAPKs, p38, ERK2, and ERK5. Phosphorylation by OXSR1 modulates the G protein sensitivity of PAK isoforms. The OXSR1 and SPAK are key enzymes in a signalling

cascade regulating the activity of Na+/K+/2Cl- co-transporters (NKCCs) in response to osmotic stress. Both kinases have a conserved carboxy-terminal (CCT) domain, which recognizes a unique peptide (Arg-Phe-Xaa-Val) motif. The OXSR1 and SPAK kinases specifically recognize their upstream activators and downstream substrates.

Reference

Tamari M.,et al.,(1999), Isolation and characterization of a novel serine threonine kinase gene on chromosome 3p22-21.3. J. Hum. Genet. 44:116-120.

Kikuno R.,et al., (1999), Prediction of the coding sequences of unidentified human genes. XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins in vitro.DNA Res. 6:197-205.

Chen W.,et al.,(2004), Characterization of OSR1, a member of the mammalian Ste20p/germinal center kinase subfamily.J. Biol. Chem. 279:11129-11136.

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