Data Sheet (Cat.No.TMPY-04753)

TargetMol

IRE1 Protein, Human, Recombinant (aa 465-977)

General Information

Synonyms: hIRE1p;endoplasmic reticulum to nucleus signaling 1;IRE1P;IRE1;IRE1a

Protein Construction: A DNA sequence encoding the human ERN1 (O75460-1) (Pro 465-Leu 977) was expressed and purified with two additional amino acids (Gly & Pro) at the N-terminus. Predicted N terminal: Gly

Species: Human

Expression Host: Baculovirus Insect Cells

Accession: O75460-1

Molecular Weight: 58.3 kDa (predicted); 65 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity: Measured by its nuclease activity to cleave Xbp1 single stem-loop mini-substrate.

Purity: > 80 % as determined by SDS-PAGE

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

Formulation: Supplied as sterile 20 mM Tris, 500 mM NaCl, 10% glycerol, pH 7.4.

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

Endoplasmic reticulum stress and hypoxia are necessary components of malignant tumors growth and suppression of ERN1 (from endoplasmic reticulum to nuclei-1) signalling pathway, which is linked to the apoptosis and cell death processes, significantly decreases proliferative processes. An enhanced expression of TP53 gene in ERN1 knockdown glioma cells correlates with the decreased level of ubiquitin ligase MDM2 and increased expression level of USP7 which deubiquitinates TP53 and MDM2 and induces TP53-dependent cell growth repression and apoptosis. Thus, the expression of genes encoding TP53 and related to TP53 factors depends upon the endoplasmic reticulum stress signaling as well as on hypoxia, and correlates with suppression of glioma growth under ERN1 knockdown. The dependence of insulin-like growth binding proteins as well as IGF2BP3 and

HTRA1 gene expressions in U87 glioma cells on ERN1 signaling enzyme function and hypoxia, indicating its participation in the regulation of metabolic and proliferative processes via IGF/INS receptors, because endoplasmic reticulum stress is an important component of tumor growth and metabolic diseases.

Reference

Trentmann,S.M. et al., 2000, Plant Mol Biol. 44 (1):11-25.
Iwawaki T., et al., 2001, Nat. Cell Biol. 3:158-64.
Liu C.Y., et al., 2003, J. Biol. Chem. 278:17680-7.
Oppermann F.S., et al., 2009, Mol. Cell. Proteomics 8:1751-64.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481