

Datasheet for ABIN7566316

ISM1 Protein (AA 30-464) (His tag)



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Overview

Quantity:	3 x 50 µg
Target:	ISM1
Protein Characteristics:	AA 30-464
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This ISM1 protein is labelled with His tag.

Product Details

Purpose:	Isthmin-1 (human) (rec.) (His)
Cross-Reactivity:	Human
Characteristics:	Human isthmin-1 (aa 30-464) is fused at the C-terminus to a His-tag.
Purity:	>95 % (SDS-PAGE)
Endotoxin Level:	<0.01EU/µg purified protein (LAL test).

Target Details

Target:	ISM1
Alternative Name:	Isthmin-1 (ISM1 Products)
Background:	C20orf82, ISM1, ISM Isthmin-1 (ISM1) was first identified as a gene expressed in the Xenopus midbrain hind brain

Target Details

organizer called isthmus, with a proposed role during early brain development. Isthmin-1 encodes a predicted ~50- kDa protein containing a signal peptide, a thrombospondin domain and an adhesion-associated domain. Isthmin-1 is important for embryonic and postnatal development. Growing evidence has shown that aberrant expression of Isthmin-1 can also affect the biological behavior of cancer. The *Ism1* gene is conserved in mice and humans. A recent study showed that *Ism1* is an adipokine that induces glucose uptake in human and mouse adipocytes. *Ism1* is secreted by mature adipocytes and triggers a signaling cascade similar to that of insulin, regulating glucose uptake while suppressing lipid accumulation. Recombinant Isthmin-1 or overexpression of *Ism1* causes a robust increase in GLUT4-dependent glucose uptake in cultured primary murine and immortalized human adipocytes as well as in primary human muscle cells and prevents insulin resistance and hepatic steatosis in a diet-induced obesity mouse model. Ablation of Isthmin-1 causes glucose intolerance and impaired insulin-stimulated adipocyte glucose uptake. Isthmin-1 suppresses de novo lipogenesis and increases protein synthesis in hepatocytes whereas Isthmin-1 knockdown in adipocytes reduces glucose uptake and insulin-dependent phosphorylation of protein kinase AKT at serine residue 473 (p-AKT_{Ser473}). Isthmin-1 signaling is dependent on PI3K and shares downstream phosphorylation targets with insulin signaling, such as p-AKT_{Ser473}, p-AKT_{Thr308}, p-ERK1/2_{Thr202/Tyr204} and p-S6_{Ser235/236}. Isthmin-1 does not seem to act through the insulin receptor or the insulin-like growth factor 1 receptor, it is most likely to signal through another, yet to be identified, receptor tyrosine kinase.

Molecular Weight: ~65kDa (SDS-PAGE)

UniProt: [B1AKI9](#)

Application Details

Restrictions: For Research Use only

Handling

Format: Lyophilized

Reconstitution: 1 mg/mL after reconstitution

Concentration: 1 mg/mL

Buffer: Contains PBS.

Handling Advice: After opening, prepare aliquots and store at -20 °C. Avoid freeze/thaw cycles. Centrifuge lyophilized vial before opening and reconstitution. For maximum product recovery after thawing,

Handling

centrifuge the vial before opening the cap.

Storage: 4 °C,-20 °C

Storage Comment: Short Term Storage: +4°C
Long Term Storage: -20°C
Use & Stability: Stable for at least 6 months after receipt when stored at -20°C.Working aliquots are stable for up to 3 months when stored at -20°C.