

INSIG2 Protein, Human (Cell-Free, His, Myc)

Cat. No.:	HY-P702338
Synonyms:	Insulin-induced gene 2 protein; INSIG-2
Species:	Human
Source:	E. coli Cell-free
Accession:	Q9Y5U4 (M1-E225)
Gene ID:	51141
Molecular Weight:	32.2 kDa

PROPERTIES

AA Sequence	<pre> M A E G E T E S P G P K K C G P Y I S S V T S Q S V N L M I R G V V L F F I G V F L A L V L N L L Q I Q R N V T L F P P D V I A S I F S S A W W V P P C C G T A S A V I G L L Y P C I D R H L G E P H K F K R E W S S V M R C V A V F V G I N H A S A K V D F D N N I Q L S L T L A A L S I G L W W T F D R S R S G F G L G V G I A F L A T V V T Q L L V Y N G V Y Q Y T S P D F L Y V R S W L P C I F F A G G I T M G N I G R Q L A M Y E C K V I A E K S H Q E </pre>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 µm filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add 5-50% of glycerol (final concentration). Our default final concentration of glycerol is 50%. Customers could use it as reference.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	INSIG2 protein operates as a key oxysterol-binding protein, exerting control over cholesterol synthesis through the modulation of SCAP transport from the endoplasmic reticulum (ER) to the Golgi and the degradation of HMGCR. Functioning as a negative regulator of cholesterol biosynthesis, INSIG2 orchestrates the retention of the SCAP-SREBP complex within the ER, inhibiting the processing of sterol regulatory element-binding proteins (SREBPs), namely SREBF1/SREBP1 and SREBF2/SREBP2. Its binding affinity for oxysterols, including 22-hydroxycholesterol, 24-hydroxycholesterol, 25-
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hydroxycholesterol, and 27-hydroxycholesterol, finely tunes the interaction with SCAP and retains the SCAP-SREBP complex within the ER. In the presence of oxysterols, INSIG2 hinders SCAP-mediated escorting of SREBF1/SREBP1 and SREBF2/SREBP2 to the Golgi. Conversely, sterol deprivation or phosphorylation by PCK1 disrupts oxysterol binding, facilitating the interaction between INSIG2 and SCAP and promoting Golgi transport of the SCAP-SREBP complex. Additionally, INSIG2 regulates cholesterol synthesis by instigating the sterol-mediated ubiquitin-mediated endoplasmic reticulum-associated degradation (ERAD) of HMGCR through recruitment to the ubiquitin ligase RNF139. Its interactions with SCAP, SREBF1/SREBP1, SREBF2/SREBP2, and RNF139 play pivotal roles in orchestrating this intricate feedback control mechanism.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA