

IGF-I R Protein, Human (HEK293, His, solution)

Cat. No.:	HY-P74442
Synonyms:	Insulin-like growth factor 1 receptor; IGF-I receptor; CD221; IGF1R
Species:	Human
Source:	HEK293
Accession:	P08069 (E31-N932)
Gene ID:	3480
Molecular Weight:	Approximately 150&120&48 kDa

PROPERTIES

AA Sequence

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M K S G S G G G S P   T S L W G L L F L S   A A L S L W P T S G   E I C G P G I D I R
N D Y Q Q L K R L E   N C T V I E G Y L H   I L L I S K A E D Y   R S Y R F P K L T V
I T E Y L L L F R V   A G L E S L G D L F   P N L T V I R G W K   L F Y N Y A L V I F
E M T N L K D I G L   Y N L R N I T R G A   I R I E K N A D L C   Y L S T V D W S L I
L D A V S N N Y I V   G N K P P K E C G D   L C P G T M E E K P   M C E K T T I N N E
Y N Y R C W T T N R   C Q K M C P S T C G   K R A C T E N N E C   C H P E C L G S C S
A P D N D T A C V A   C R H Y Y Y A G V C   V P A C P P N T Y R   F E G W R C V D R D
F C A N I L S A E S   S D S E G F V I H D   G E C M Q E C P S G   F I R N G S Q S M Y
C I P C E G P C P K   V C E E E K K T K T   I D S V T S A Q M L   Q G C T I F K G N L
L I N I R R G N N I   A S E L E N F M G L   I E V V T G Y V K I   R H S H A L V S L S
F L K N L R L I L G   E E Q L E G N Y S F   Y V L D N Q N L Q Q   L W D W D H R N L T
I K A G K M Y F A F   N P K L C V S E I Y   R M E E V T G T K G   R Q S K G D I N T R
N N G E R A S C E S   D V L H F T S T T T   S K N R I I I T W H   R Y R P P D Y R D L
I S F T V Y Y K E A   P F K N V T E Y D G   Q D A C G S N S W N   M V D V D L P P N K
D V E P G I L L H G   L K P W T Q Y A V Y   V K A V T L T M V E   N D H I R G A K S E
I L Y I R T N A S V   P S I P L D V L S A   S N S S S Q L I V K   W N P P S L P N G N
L S Y Y I V R W Q R   Q P Q D G Y L Y R H   N Y C S K D K I P I   R K Y A D G T I D I
E E V T E N P K T E   V C G G E K G P C C   A C P K T E A E K Q   A E K E E A E Y R K
V F E N F L H N S I   F V P R P E R K R R   D V M Q V A N T T M   S S R S R N T T A A
D T Y N I T D P E E   L E T E Y P F F E S   R V D N K E R T V I   S N L R P F T L Y R
I D I H S C N H E A   E K L G C S A S N F   V F A R T M P A E G   A D D I P G P V T W
E P R P E N S I F L   K W P E P E N P N G   L I L M Y E I K Y G   S Q V E D Q R E C V
S R Q E Y R K Y G G   A K L N R L N P G N   Y T A R I Q A T S L   S G N G S W T D P V
F F Y V Q A K T G Y   E N
  
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Biological Activity

1. Measured by its ability to bind IGF1 Protein, Human, Recombinant in functional ELISA.
2. Captured IGF1R on NTA Chip can bind IGF1 with an affinity constant of 0.1317 μ M as determined in a SPR assay (Biacore T200).

Appearance

Solution.

Formulation	Supplied as a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

Background

The IGF-I receptor (IGF1R) is a receptor tyrosine kinase that plays a pivotal role in mediating the actions of insulin-like growth factor 1 (IGF1). It exhibits high affinity for IGF1 and lower affinity for IGF2 and insulin (INS). Upon ligand binding, IGF1R activates its kinase, leading to receptor autophosphorylation and tyrosine phosphorylation of various substrates, including insulin-receptor substrates (IRS1/2), Shc, and 14-3-3 proteins. This initiates two main signaling pathways: the PI3K-AKT/PKB pathway, which inhibits apoptosis and stimulates protein synthesis, and the Ras-MAPK pathway, promoting increased cellular proliferation. Phosphorylated IRS1 can activate the PI3K pathway, leading to downstream activation of AKT/PKB and subsequent enhancement of protein synthesis and antiapoptotic effects. Simultaneously, recruitment of Grb2/SOS by phosphorylated IRS1 or Shc activates the Ras-MAPK pathway. Additionally, IGF1R signals through the JAK/STAT pathway, potentially contributing to its transforming activity. The JNK kinases can also be activated by IGF1R, and IGF1 inhibits JNK activation by phosphorylating and inhibiting MAP3K5/ASK1. Hybrid receptors composed of IGF1R and INSR isoforms exhibit varying binding characteristics, indicating high affinity for IGF1 and low affinity for insulin.

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

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