

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

<b>Cat. No.:</b>	HY-P72606
<b>Synonyms:</b>	Insulin-like growth factor 1 receptor; IGF-I receptor; IGF1R; CD221
<b>Species:</b>	Human
<b>Source:</b>	HEK293
<b>Accession:</b>	P08069 (E31-N932)
<b>Gene ID:</b>	3480
<b>Molecular Weight:</b>	100-130&54 kDa

### PROPERTIES

#### AA Sequence

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	

**Appearance** Lyophilized powder.

**Formulation** Lyophilized from a 0.2 µm filtered solution of PBS, 1 mM EDTA, 0.5% Tween-20, 5% Trehalose, pH 7.4.

**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<sub>2</sub>O.

**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**

The IGF-1 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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