

HER2/CD340 Protein, Rat (HEK293, His)

Cat. No.:	HY-P74895
Synonyms:	Receptor tyrosine-protein kinase erbB-2; MLN 19; CD340; ERBB2; HER2; NEU; NGL
Species:	Rat
Source:	HEK293
Accession:	AAH61863 (M4-T656)
Gene ID:	24337
Molecular Weight:	Approximately 91 kDa

PROPERTIES

AA Sequence

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

Biological Activity

Measured by its ability to block anti-ErbB2 mediated inhibition of SK-BR-3 human breast cancer cell proliferation. The ED₅₀ this effect is $\leq 1.043 \mu\text{g/mL}$ in the presence of $0.6 \mu\text{g/mL}$ Trastuzumab, corresponding to a specific activity is $\geq 9.59 \times 10^2$ units/mg.

Appearance

Lyophilized powder.

Formulation

Lyophilized from a $0.2 \mu\text{m}$ filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.

Endotoxin Level

<1 EU/ μg , determined by LAL method.

Reconstitution

It is not recommended to reconstitute to a concentration less than $100 \mu\text{g/mL}$ in ddH₂O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).

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**

HER2/CD340 protein, a multifaceted protein tyrosine kinase, serves as an essential component within various cell surface receptor complexes, requiring a coreceptor for ligand binding. Integral to neuregulin-receptor complexes, it collaborates with neuregulins, and GP30 emerges as a potential ligand for this receptor. Beyond its receptor roles, HER2/CD340 plays a pivotal role in regulating the outgrowth and stabilization of peripheral microtubules (MTs). Upon activation, the MEMO1-RHOA-DIAPH1 signaling pathway, triggered by ERBB2 activation, leads to GSK3B phosphorylation and subsequent inhibition at the cell membrane. This orchestrated inhibition prevents the phosphorylation of APC and CLASP2, facilitating their association with the cell membrane. The membrane-bound APC, in turn, facilitates the localization of MACF1 to the cell membrane, a critical step for microtubule capture and stabilization. Inside the nucleus, HER2/CD340 is involved in transcriptional regulation, associating with the 5'-TCAAATTC-3' sequence in the PTGS2/COX-2 promoter and activating its transcription. Additionally, it participates in the transcription of rRNA genes by RNA Pol I, enhancing protein synthesis and promoting cell growth. The multifaceted functions of HER2/CD340 underscore its central role in diverse cellular processes, from receptor signaling to microtubule dynamics and transcriptional regulation.

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

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