EGFR Protein, Human (Biotinylated, HEK293, His-Avi)

Cat. No.:	HY-P78118
Synonyms:	ErbB; EC 2.7.10; EC 2.7.10.1; EGFR; mENA; LEGFR; ERBB; ERBB1; HER1; PIG61; NISBD2
Species:	Human
Source:	HEK293
Accession:	P00533-1 (L25-S645)
Gene ID:	1956
Molecular Weight:	80-110 kDa

PROPERTIES

Biological Activity	Biotinylated Human EGFR, His Tag captured on CM5 Chip via Anti-his antibody can bind Human EGF, No Tag with an affinity constant of 0.64 nM as determined in SPR assay (Biacore T200).
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4. Normally 8% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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 EGFR protein, a receptor tyrosine kinase, binds ligands of the EGF family, including EGF, TGFA/TGF-alpha, AREG, epigen/EPGN, BTC/betacellulin, epiregulin/EREG, and HBEGF/heparin-binding EGF. This interaction initiates cascades that convert extracellular signals into cellular responses, involving receptor homo- and/or heterodimerization and autophosphorylation on key cytoplasmic residues. The phosphorylated receptor recruits adapter proteins like GRB2, activating downstream signaling cascades, including RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLCgamma-PKC, and STATs modules. Additionally, EGFR may trigger the NF-kappa-B signaling cascade and directly phosphorylate proteins like RGS16, activating its GTPase activity, potentially linking EGF receptor signaling to G protein-coupled receptor signaling. Furthermore, EGFR phosphorylates MUC1, enhancing its interaction with SRC and CTNNB1/beta-catenin. It positively regulates cell migration through interaction with CCDC88A/GIV, retaining EGFR at the cell membrane post-ligand stimulation, thereby promoting EGFR signaling and triggering cell migration. Beyond its canonical functions, EGFR contributes to enhancing learning and memory performance and plays a role in mammalian pain signaling, with isoform 2 potentially acting as an antagonist to EGF action.

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

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