Revision 3

Store at -20C

#64952

EGF Receptor vIII (D6T2Q) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
IHC-P, IF-IC	H	Endogenous (IHC-P), Transfected (IF)	Rabbit IgG	#P00533	1956

Product Usage Information

Application	Dilution
Immunohistochemistry (Paraffin)	1:200
Immunofluorescence (Immunocytochemistry)	1:3200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #93186.

Specificity/Sensitivity

EGF Receptor vIII (D6T2Q) XP® Rabbit mAb recognizes endogenous and transfected levels of EGF Receptor vIII protein by immunohistochemistry and immunofluorescence, respectively.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human EGF Receptor vIII protein.

Background

The epidermal growth factor (EGF) receptor is a transmembrane tyrosine kinase that belongs to the HER/ErbB protein family. Ligand binding results in receptor dimerization, autophosphorylation, activation of downstream signaling, internalization, and lysosomal degradation (1,2). Phosphorylation of EGF receptor (EGFR) at Tyr845 in the kinase domain is implicated in stabilizing the activation loop, maintaining the active state enzyme, and providing a binding surface for substrate proteins (3,4). c-Src is involved in phosphorylation of EGFR at Tyr845 (5). The SH2 domain of PLCγ binds at phospho-Tyr992, resulting in activation of PLCγ-mediated downstream signaling (6). Phosphorylation of EGFR at Tyr1045 creates a major docking site for the adaptor protein c-Cbl, leading to receptor ubiquitination and degradation following EGFR activation (7,8). The GRB2 adaptor protein binds activated EGFR at phospho-Tyr1068 (9). A pair of phosphorylated EGFR residues (Tyr1148 and Tyr1173) provide a docking site for the Shc scaffold protein, with both sites involved in MAP kinase signaling activation (2). Phosphorylation of EGFR at specific serine and threonine residues attenuates EGFR kinase activity. EGFR carboxy-terminal residues Ser1046 and Ser1047 are phosphorylated by CaM kinase II; mutation of either of these serines results in upregulated EGFR tyrosine autophosphorylation (10).

EGFR variant III (EGFRvIII) is a truncated, constitutively active mutant form of EGFR that results from an in-frame deletion of exons 2-7 (11,12). EGFRvIII is expressed in various cancers, most notably glioblastoma, where it is expressed at a frequency of 25-30%. Although complicated by the fact that it is often co-expressed with amplified EGFR, EGFRvIII is a potential therapeutic target (13).

Background References

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13. Padfield, E. et al. (2015) *Front Oncol* 5, 5.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

IHC-P: Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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