

BACKGROUND

The epidermal growth factor receptor (EGFR) is a transmembrane glycoprotein that constitutes one of four members of the erbB family of tyrosine kinase receptors.¹ Upon activation by at least five genetically distinct ligands (including EGF, transforming growth factor- α (TGF α) and heparin-binding EGF (HB-EGF), the intrinsic kinase is activated and EGFR tyrosyl-phosphorylates itself and numerous intermediary effector molecules, including closely-related c-erbB receptor family members. This initiates myriad signaling pathways. The integrated biological responses to EGFR signaling are pleiotropic including mitogenesis or apoptosis, enhanced cell motility, protein secretion, and differentiation or dedifferentiation.² Although present in normal cells, EGFR is overexpressed in a variety of tumor cell lines and has been associated with poor prognosis and decreased survival. EGFR activation also plays a role in resistance to chemotherapy and radiation treatment in tumor cells.³ Thus, EGFR and its downstream signaling molecules are targets for therapeutic interventions in cancer and many other clinical pathogenesis.⁴

There are several tyrosines phosphorylated by autophosphorylation of EGFR or other tyrosine kinases during the receptor activation. Tyr845 is in activation loop of EGFR kinase domain, which was phosphorylated by Src and required for full-activation of EGFR kinase activity. The other autophosphorylated tyrosine residues provide docking sites for downstream signaling components. Grb2-SH2 binds to phospho-Tyr1068; SHP-1-SH2 binds to phospho-Tyr1173; SHC-SH2 binds to Phospho-Tyr1148 and -Tyr1086; PLC-gamma-SH2 binds to phospho-Tyr992; and c-Cbl-SH2 binds to phospho-Tyr1045.⁵

References:

1. Burgess AW: Growth Factors, 26:263-274, 2008.
2. Normanno N et al.: Gene 366:2-16, 2006.
3. Hopper-Borge EA et al.: Expert Opin Ther Targets. 13:339-362, 2009.
4. Sharma PS et al.: Curr Pharm Des. 15:758-776, 2009.
5. Olayioye, M.A. et al: EMBO J.19:3159-67,2000

TECHNICAL INFORMATION

Source:

Phospho-EGFR (Tyr845) Antibody is a rabbit antibody raised against a short peptide from human EGFR sequence surrounding and containing phospho-Tyr845.

Specificity and Sensitivity:

This antibody detects endogenous phosphorylated EGFR (Tyr845) proteins and may cross-reacts with other activated ErbB family members, but without cross-reactivity with other protein tyrosine kinases.

Storage Buffer: Solution in Dulbecco's phosphate buffered saline (without Mg²⁺ and Ca²⁺), pH 7.3, with 50% glycerol, 1.0 mg/ml BSA (IgG and protease free) and 0.05% sodium azide.

Storage:

Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

| Application: | *Dilution: |
|---|------------|
| WB | 1:1,000 |
| IP | n/d |
| IHC | n/d |
| ICC | n/d |
| FACS | n/d |
| <i>*Optimal dilutions must be determined by end user.</i> | |

