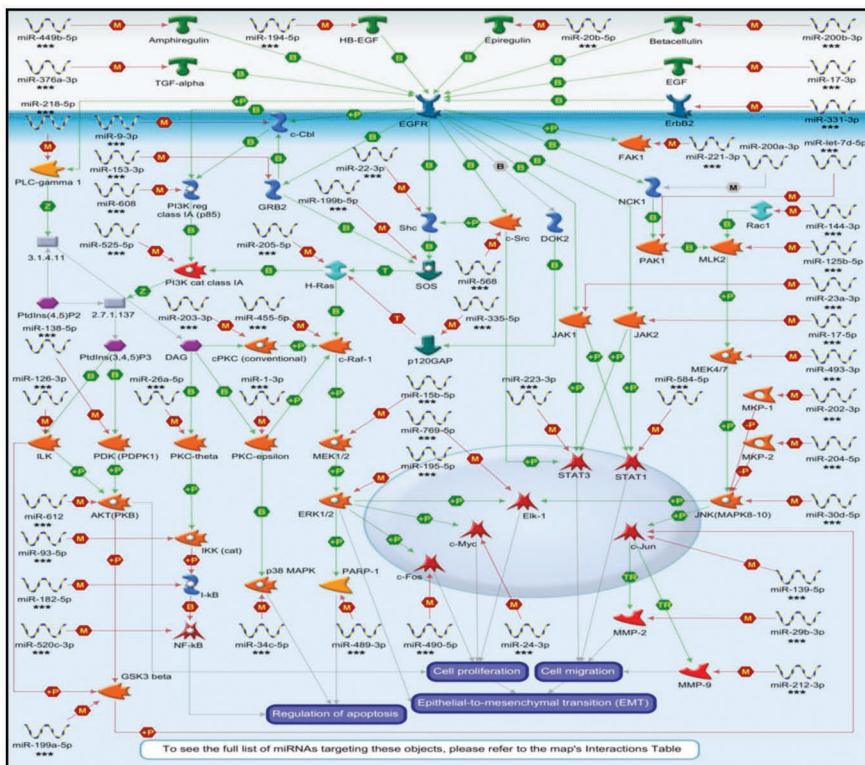


6



Epidermal growth factor receptor (EGFR) belongs to the ERBB family of receptor tyrosine kinases that contains four closely related members EGFR and ERBB2-4. They couple the binding of the extracellular growth factor ligands to intracellular signalling pathways that regulate diverse biologic responses, including proliferation, differentiation, cell motility, and survival. Six ligands of EGFR are known. These are Epidermal growth factor (EGF), Amphiregulin, Transforming growth factor alpha (TGF-alpha), Betacellulin, Heparin binding EGF-like growth factor (HB-EGF), and Epiregulin. ErbB2 is a unique member of the ERBB family in that it does not bind any of the known ligands with high affinity. However, it is the preferred heterodimeric partner for other EGFRs.

The ligand-induced receptor dimerization and subsequent autophosphorylation of distinct tyrosine residues creates docking sites for various membrane-targeted proteins. The cytoplasmic mediators that bind to EGFR phospho-tyrosine residues are either the adaptor proteins, such as SHC transforming protein 1 (Shc), Growth factor receptor-bound protein 2 (GRB2), Cas-Br-M ecotropic retroviral transforming sequence (C-Bl), Docking protein 2 (DOK2) and NCK adaptor protein 1 (NCK1), or enzymes, such as Phospholipase C gamma 1 (PLC-gamma 1), v-Src sarcoma viral oncogene homolog (c-Src) and PTK2 protein tyrosine kinase 2 (FAK1).

MIRXES has 228 miRNAs targeting 71 proteins on this signalling cascade, indicating that most proteins involved in the EGFR pathway are miRNA targets and may therefore be affected by miRNA action.

Hi-resolution Pathway Map	Full pathway summary & Citations	Relevant microRNA and gene transcripts	Interactions Table
