

# Enzyme linked receptors

## Receptor Tyrosine kinase

-With intrinsic enzymatic activity

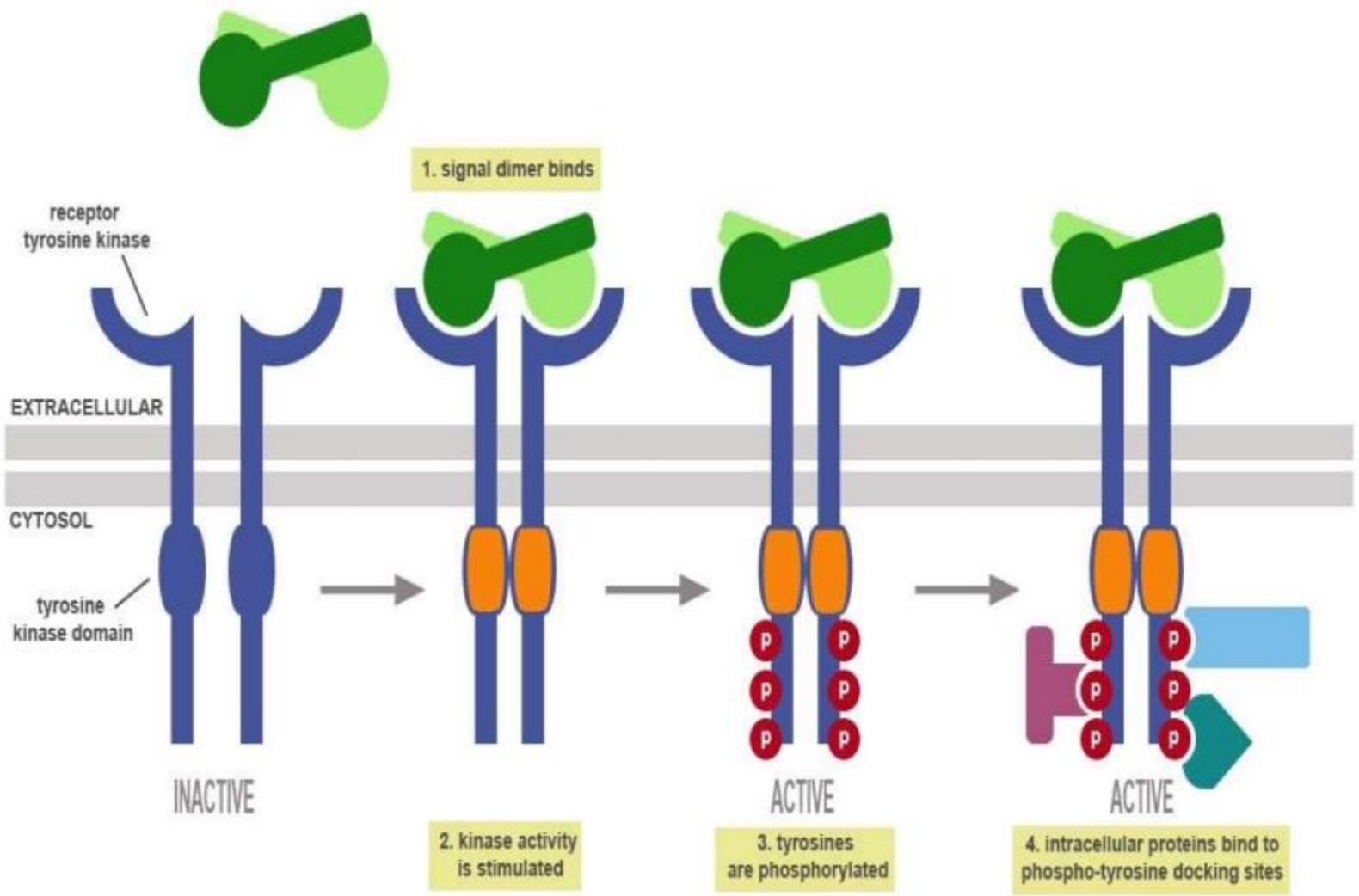
## Tyrosine kinase associated receptor

-Without intrinsic enzymatic activity, but bind a tyrosine kinase on activation

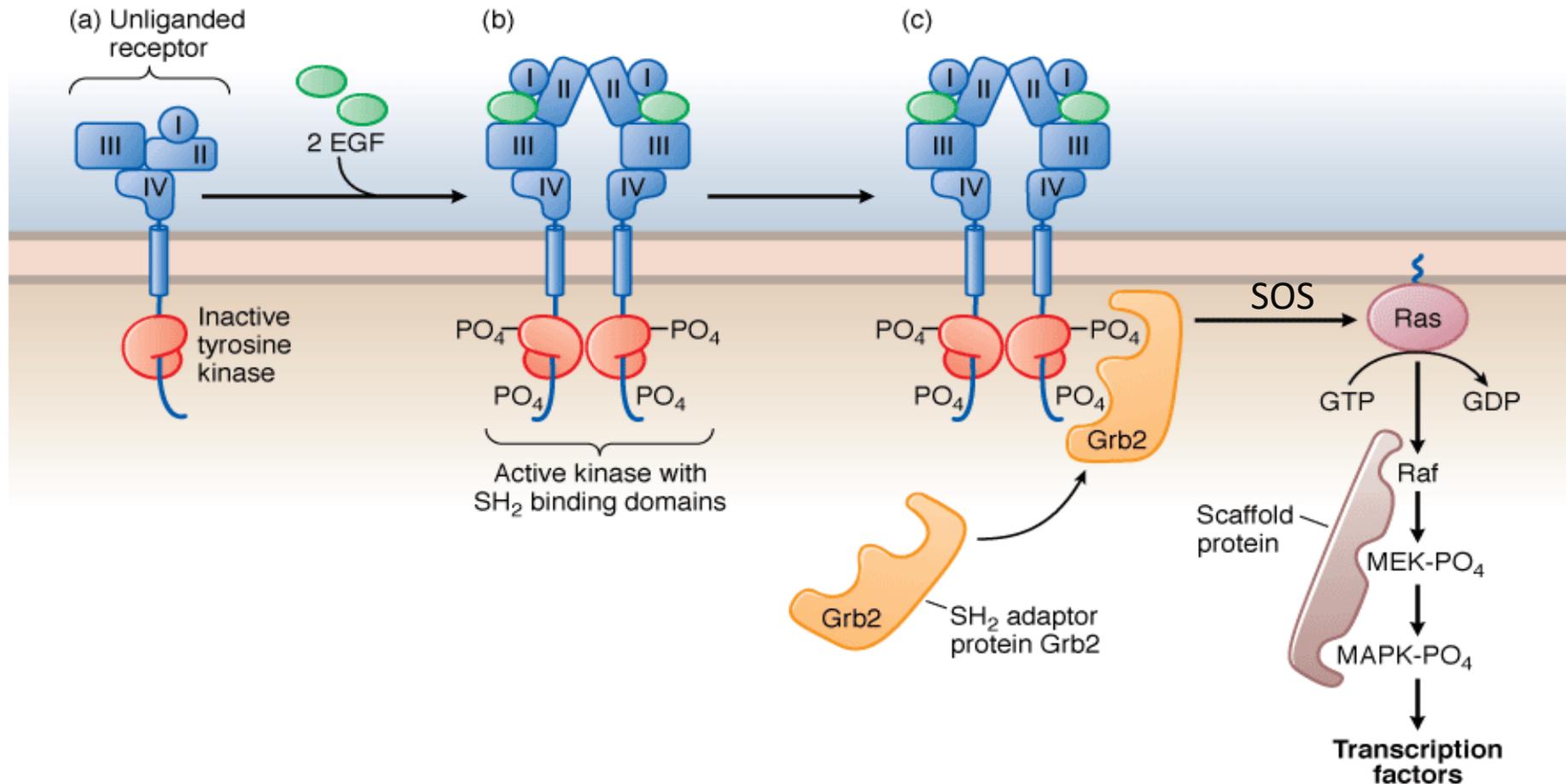
# Receptor Tyrosine kinase

STRUCTURAL FAMILY	FUNCTIONAL FAMILY	PHYSIOLOGICAL LIGANDS	EFFECTORS AND TRANSDUCERS	EXAMPLE DRUGS
<b>Transmembrane enzymes</b>	Receptor tyrosine kinases	Insulin, PDGF, EGF, VEGF, growth factors	SH2 domain and PTB-containing proteins	Herceptin, imatinib

single subunit receptors but some exist as [multimeric complexes](#), e.g., the [insulin receptor](#)



# Activation of the EGF receptor



## Herceptin

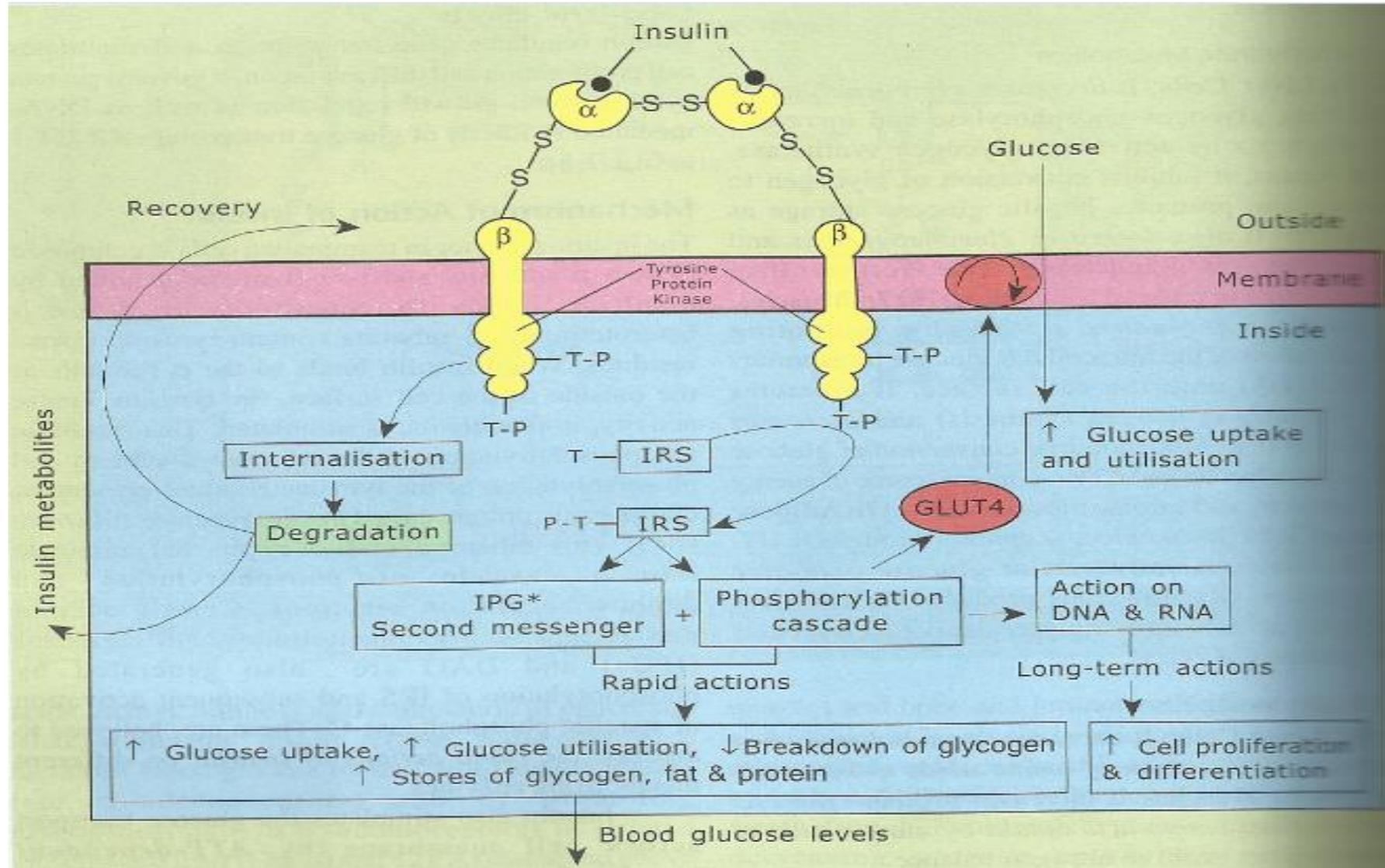
treatment of early-stage breast cancer

Bind to Human Epidermal growth factor Receptor 2

block intracellular signaling pathways

SOS (Son of Sevenless) acts as a Guanine Nucleotide Exchange Factor (GEF)

# Insulin Signaling Pathways



IPG, second messengers of insulin

GLUT-4—Glucose transporter-4; IRS—Insulin receptor substrate; T—Tyrosine; P—Phosphate;  
 \*Inositolphosphoglycans (IPGs) are released outside of the cell but then transported back into the cell