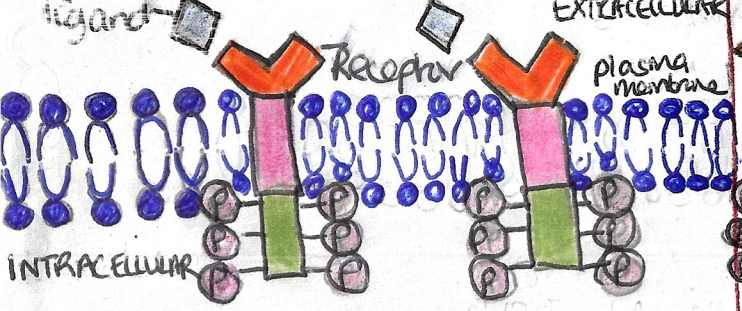
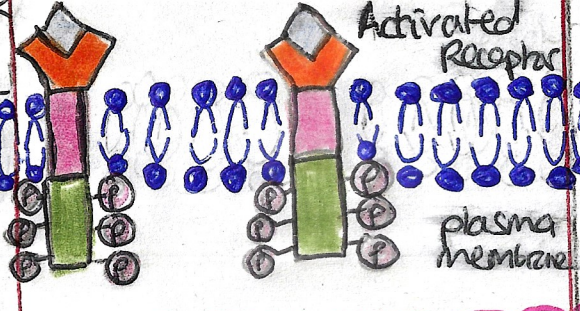


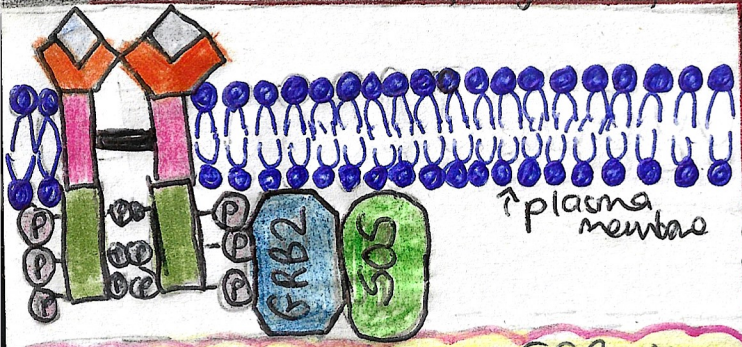
The epidermal growth factor(EGF) is the protein produced from endocrine cells and it stimulates epidermal cells e.g skin cells. It is an example of a growth factor



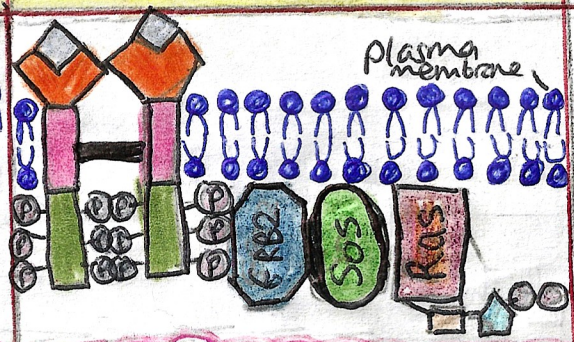
The ligand binds to the receptor. This occurs with two receptors.

This causes the subunits of the EGF receptor to dimerize and phosphorylate each other

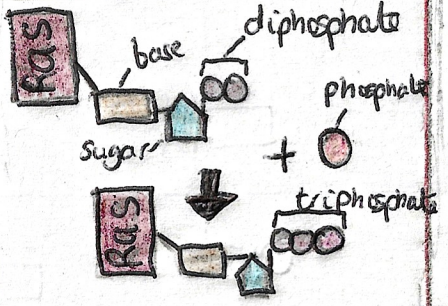
The phosphorylate site of the EGF receptor is recognised by the intracellular protein called GRB



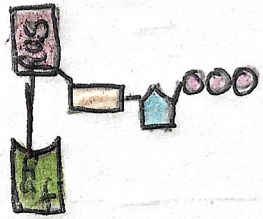
The binding between EGF with GRB2. This causes the conformation of GRB2. This leads to binding with the Sos protein.



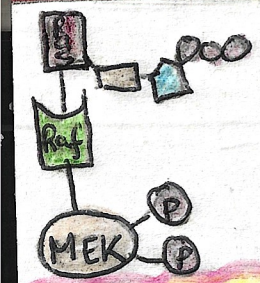
The activated Sos protein changes its conformation and binds to the Ras protein.
Ras is bound to GDP (guanosine diphosphate)



Ras releases GDP and bind to GTP (guanosine triphosphate).

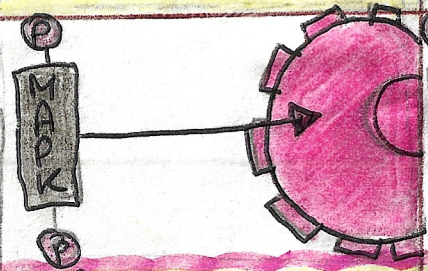


Ras binds to an enzyme called Raf. Raf-1 is a type of protein kinase that phosphorylates target prote

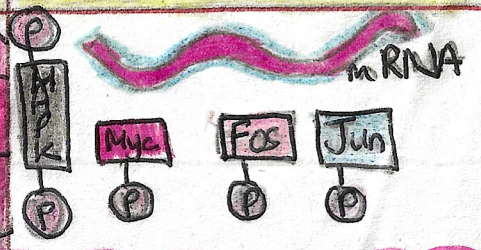


Raf-1 phosphorylates MEK

MEK phosphorylates the enzyme (MAPK) mitogen-activated protein kinase.



MAPK enters through the nucleus



MAPK phosphorylates transcription factor proteins Myc, fos and Jun to start transcription.