BIOLOGICAL FRAMEWORKS FOR ENGINEERS

Session #13a [µm: Cell Signaling]

<u>General Objectives:</u>

- ✓ Discuss cell signaling strategies and general communication.
- Examine specific local cell signaling pathways as examples of signal transduction and control.

Central Framework:

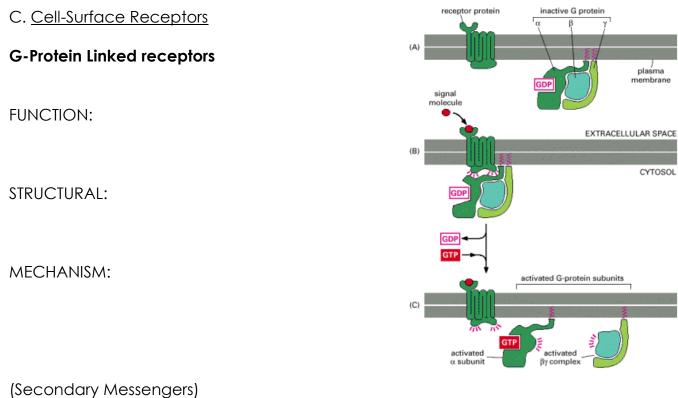
✓ Cell signaling is a complex control system regulated by numerous factors.

Session Outline:

A. <u>Basics of Signal Transduction [Reception – Transduction – Response]</u>

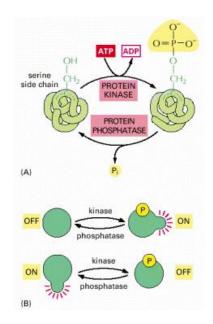
- etracellular signal molecule
- B. <u>Components of Signal Transduction</u>

ME411/511



(secondary messengers)

(Protein Phosphorylation)

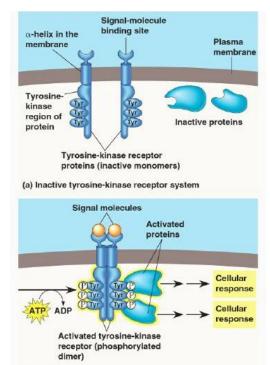


Receptor Tyrosine Kinases

FUNCTION:

STRUCTURE:

MECHANISM:



(b) Activated system

(Signaling Pathways – MAP Kinase)