

Advanced Topics in Cellular Physiology (PSIO 404)

Instructor: Dr. Price

Here's a sample syllabus and lecture schedule for the course!



Are you interested in learning about how certainty is created from uncertainty by cells?

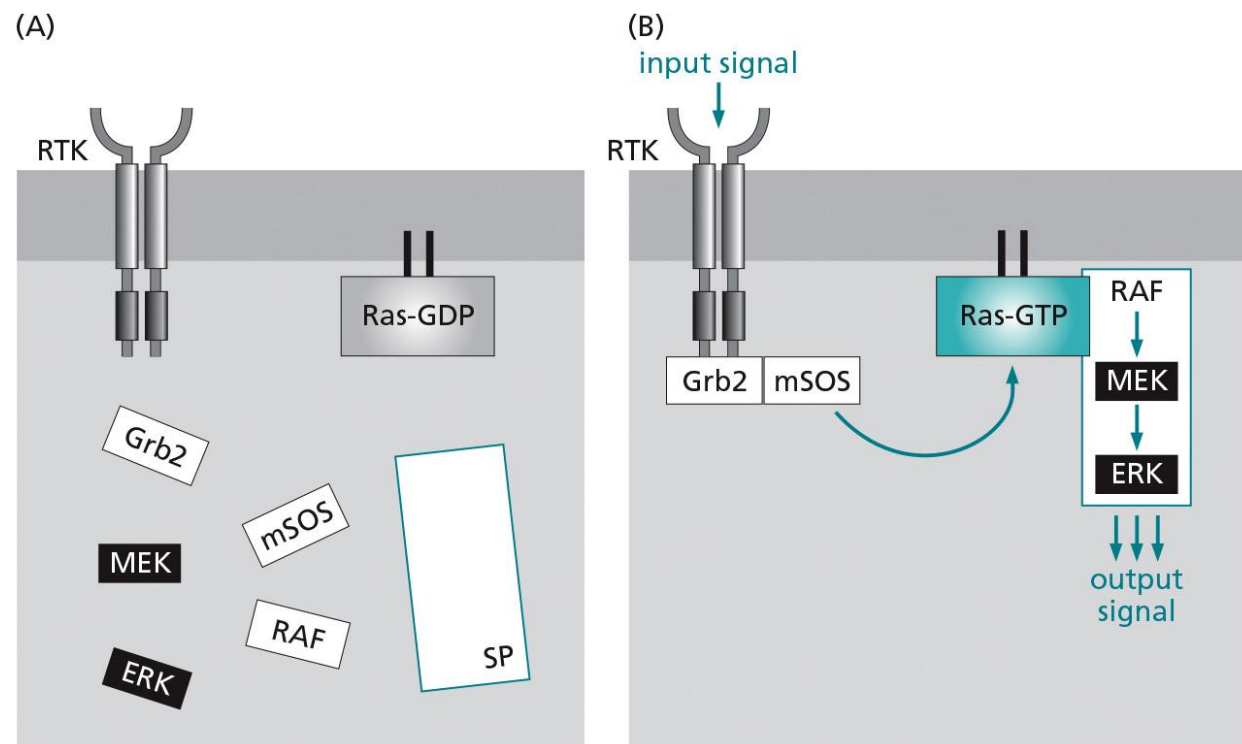


Figure 10.3 Cellular Signal Processing 2e (© Garland Science 2017)

Are you interested in learning about the specific structural elements which enable signaling proteins to do what they do?

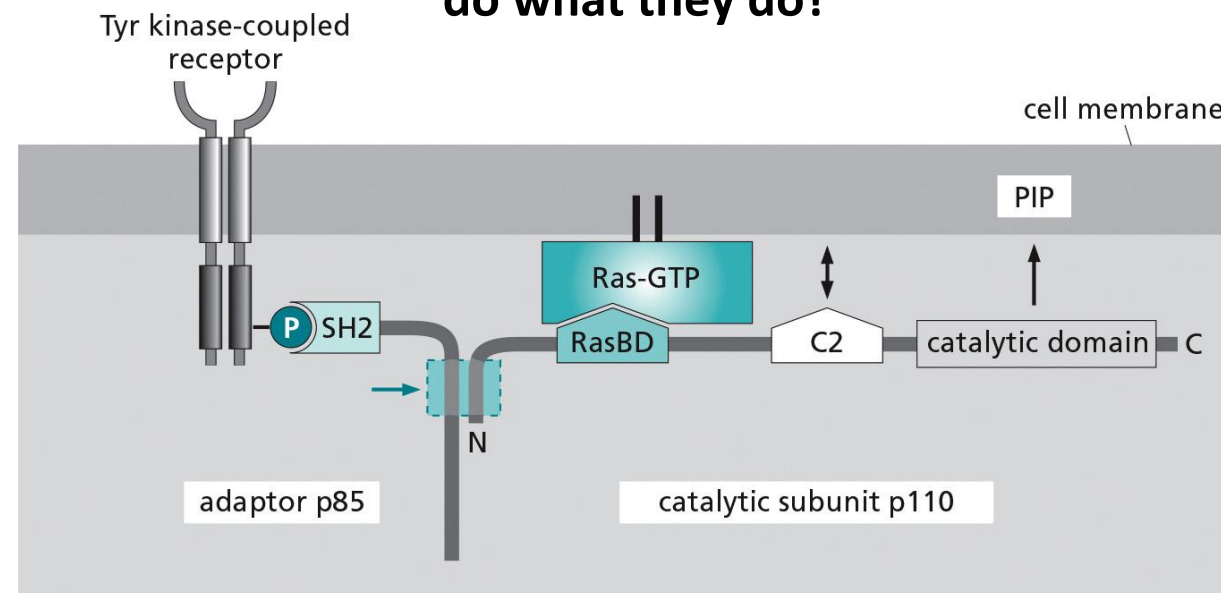


Figure 10.6 Cellular Signal Processing 2e (© Garland Science 2017)

Are you interested in learning about common themes or patterns in the way cells process information?

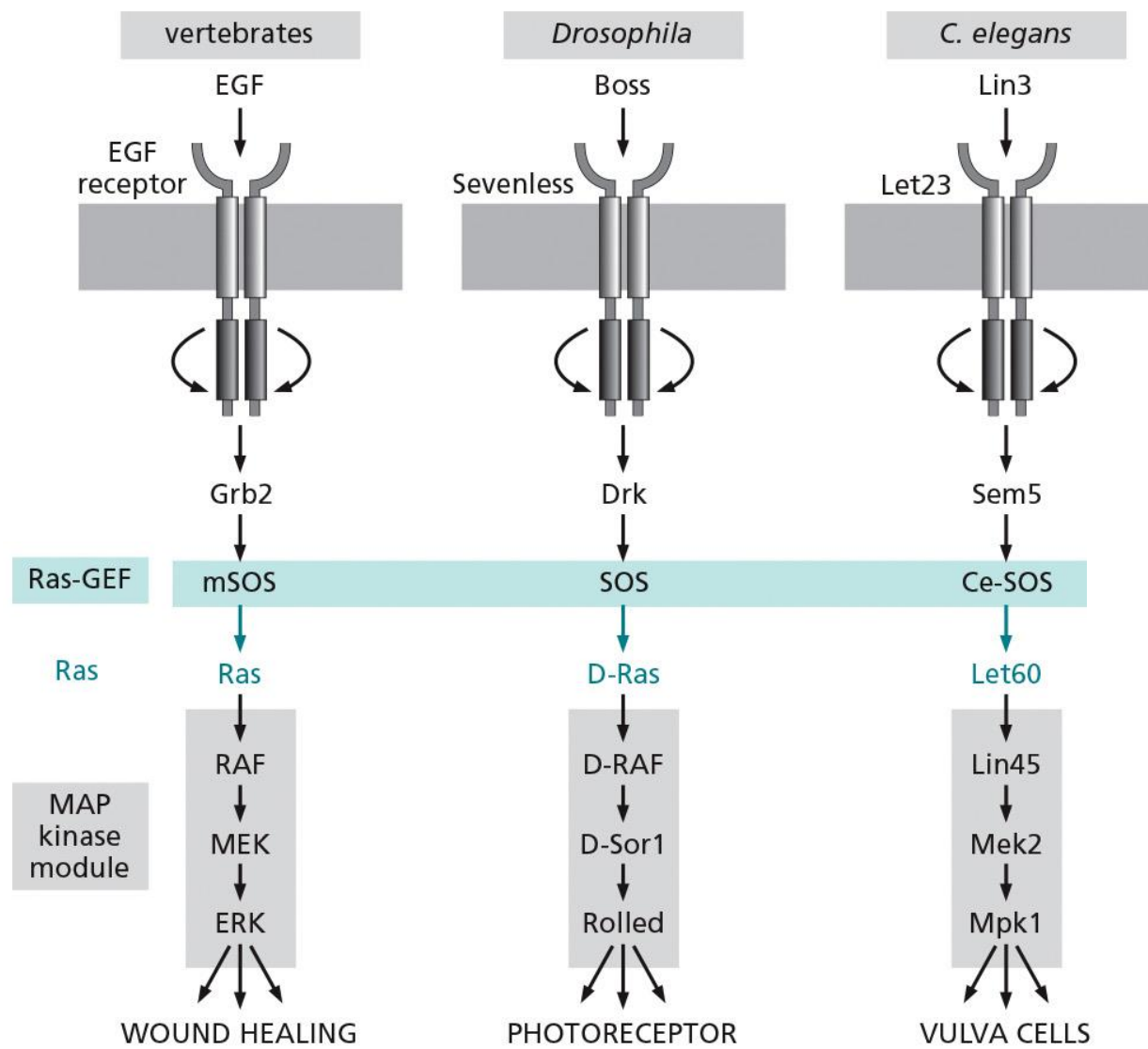


Figure 10.5 Cellular Signal Processing 2e (© Garland Science 2017)

Do you know how research recognized by the 1974 Nobel Prize in Physiology or Medicine led to the discovery of cell signal processing?

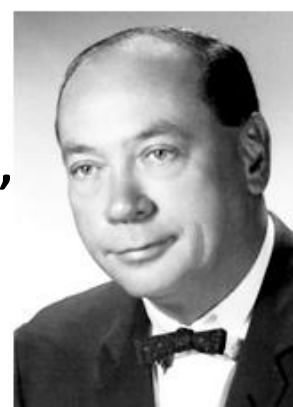


Carl Ferdinand Cori, Gerty Theresa Cori, née Radnitz, Bernardo Alberto Houssay

The Nobel Prize in Physiology or Medicine 1947 was divided, one half jointly to Carl Ferdinand Cori and Gerty Theresa Cori, née Radnitz "for their discovery of the course of the catalytic conversion of glycogen" and the other half to Bernardo Alberto Houssay "for his discovery of the part played by the hormone of the anterior pituitary lobe in the metabolism of sugar".

Photos: Copyright © The Nobel Foundation

Do you know why the research of a medical student (and research assistant to Carl and Gerty Cori) led to discovery of 2nd messengers, regulatory protein phosphorylation, and the 1971 Nobel Prize in Physiology or Medicine?



Photos: Copyright © The Nobel Foundation

The Nobel Prize in Physiology or Medicine 1971 was awarded to Earl W. Sutherland, Jr. "for his discoveries concerning the mechanisms of the action of hormones".

In PSIO 404, we explore advanced topics in a collection of five modules:

Module 1: The Cell's "Brain"
The Cellular Toolbox for Information Processing

Module 2: The Cell's "ICT Department"
The Core Components of Cellular Information Processing

Module 3: The Cell's "Sensory Apparatus"
The Major Mechanisms for Cellular Comprehension of the External Environment

Module 4: Cellular "Decision Making"
The Cellular Integration Process for Information

Module 5: Cellular "Responsiveness"
The Mediation of Motor & Non-Motor Cellular Responses to Conditions and Signals