

# Lipid-mediated Protein Signaling #9789400763319 #2013 #Springer Science & Business Media, 2013 #Daniel G.S. Capelluto #219 pages

Lipid and protein molecules of particular types can come together and form distinct areas called "ordered" and "disordered" domains. The lipids in ordered domains are more tightly packed than disordered domains and it is thought that this difference allows domains to selectively exclude or include certain proteins. Thus, we both conclude that lipid-mediated interactions can play a significant role in signal transduction from BCRs activated through protein clustering and can describe a plausible mechanism for their action. We suggest that the signaling function conferred by formation of phase-like domains around BCR clusters is an emergent property of a system where signaling molecules are compartmentalized based on their interactions with plasma membrane lipids.

Lipid-Mediated Signaling. 1.1 INTRODUCTION Cellular membrane phospholipids are important structural elements that also serve as precursors for second messenger molecules that have important roles in cellular signaling processes. These second messenger molecules are generated by the action of intracellular or extracellular phospholipases.

Lipid-Mediated Signaling. Group III sPLA2 is a 15 kDa protein with the characteristic calcium-binding loop and 10 cysteine residues. In humans, the catalytic site is flanked by N- and C-terminal regions, resulting in a 55 kDa protein that sets it apart from the other members of the sPLA2 family.

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With contributions from eleven leading research teams, this book updates the most recent findings associated with lipid-mediated cell signaling in mammals and plants. Contributors give comprehensive overviews of the physiological role of sphingolipids and phospholipids and how they undergo synthesis and turnover. Emphasis on the structural aspects of protein-lipid interactions is compiled in several chapters with great detail, whereas fully described mechanisms of lipid-mediated membrane targeting and insertion are considered in others. Authors also discuss models and techniques used to charac