Voltage-Sensing Phosphatase: Its Molecular Relationship With PTEN
Yasushi Okamura and Jack E. Dixon
Voltage-sensing phosphatase has the transmembrane voltage sensor and cytoplasmic phosphatase region, and couples membrane voltage to phosphoinositide turnover at cell membranes.

Role of TRP Channels in the Regulation of the Endosomal Pathway
Ken Abe and Rosa Puertollano
This review focuses on the members of the transient receptor potential superfamily of ion channels that localize and function at the endosomal pathway.

Protein Kinase D Signaling: Multiple Biological Functions in Health and Disease
Enrique Rozengurt
This review focuses on the function of PKD signaling in the regulation of multiple biological processes and highlights novel concepts emerging from recent studies.

Regulated Intramembrane Proteolysis: Signaling Pathways and Biological Functions
Mark Lal and Michael Caplan
This article examines the role of intramembrane proteolysis in the regulation of multiple neuronal and physiological processes.

Spontaneous Neurotransmission: An Independent Pathway for Neuronal Signaling?
Ege T. Kavalali, Chi-Hye Chung, Mikhail Khvotchev, Jeremy Leitz, Elena Nosyreva, Jesica Raingo, and Denise M. O. Ramirez
This article examines the role of spontaneous release events in neuronal signaling by focusing on aspects that distinguish this process from evoked neurotransmission.

Oxidative Stress and Cell Membranes in the Pathogenesis of Alzheimer’s Disease
Paul H. Axel, Hiroaki Komatsu, and Ian V. J. Murray
This review considers the evidence that lipid membranes are either a source of neurotoxic lipid oxidation products or the target of pathogenic processes involving amyloid β proteins that cause permeability changes or ion channel formation.

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