1. Record Nr. UNINA9910346757603321

Autore	Enikö Kallay
Titolo	Physiology and Pathophysiology of the Extracellular Calcium-Sensing Receptor
Pubbl/distr/stampa	Frontiers Media SA, 2018
Descrizione fisica	1 online resource (189 p.)
Collana	Frontiers Research Topics
Soggetti	Physiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Calcium is vital for human physiology; it mediates multiple signaling cascades, critical for cell survival, differentiation, or death both as first and as second messenger. The role of calcium as first messenger is mediated by the G-protein coupled receptor, the extracellular calcium-sensing receptor (CaSR). The CaSR is a multifaceted molecule that senses changes in the concentration of a wide variety of environmental factors including di- and trivalent cations, amino acids, polyamines, and pH. In calcitropic tissues with obvious roles in calcium homeostasis such as parathyroid, kidney, and bone it regulates circulating calcium concentrations. The germline mutations of the CaSR cause parathyroid disorders demonstrating the importance of the CaSR for the maintenance of serum calcium homeostasis. The CaSR has an important role also in a range of non-calcitropic tissues, such as the intestine, lungs, central and peripheral nervous system, breast, skin and reproductive system, where it regulates molecular and cellular processes such as gene expression, proliferation, differentiation and apoptosis; as well as regulating hormone secretion and lactation. This Research Topic is an overview of the CaSR and its molecular signaling properties together with the various organ systems where it plays an important role. The articles highlight the current knowledge regarding many aspects of the calcitropic and non-calcitropic physiology and pathophysiology of the CaSR.