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STIM and Orai Communication in Health and Disease

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Message from the Collection Editor

Dear Colleagues,

Accurately tuned intracellular Ca^{2+} signaling is indispensable for the regulation of a plethora of cellular processes occurring over a wide temporal range, including for instance neuronal signaling, proliferation, and gene transcription. A single defect of one of these molecular key players can lead to abnormal cytosolic Ca^{2+} levels, which can be responsible for severe disorders in the immune system, heart function, and neurons or even for cancer. A prominent Ca^{2+} signaling pathway in the cell represents the CRAC channel, composed of two molecular key STIM1 players, a Ca^{2+} sensor in the endoplasmic reticulum, and Orai1, a highly Ca^{2+} selective ion channel in the plasma membrane. These two proteins and their isoforms have been known for more than a decade, and a series of milestones have been reached in the understanding of their structure–function relationship, interplay, and co-regulation with modulatory factors as well as their significance in disease.

Herewith, I would like to cordially invite you all to contribute to this Topic Collection on “STIM1 and Orai1 Communication in Health and Disease”.



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Topical Collection



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