Special Issue

Signaling and Organelle Polarization at the Immunological Synapse

Message from the Guest Editors

The immunological synapse (IS) is a specialized transient cell-cell junction that mediates lymphocyte activation and effector function following antigen recognition. The outcome of IS formation depends on a finely tuned polarization of signaling molecules and cellular organelles. Over the last 20 years, we have learned that proper signaling and organelle polarization are tightly interdependent. Early signaling networks that are reorganized upon initial antigen scanning trigger the polarization of different organelles, including the endosomal compartment, cytoskeleton structures, and mitochondria. In turn, organelle polarization sustains activating signals for full lymphocyte activation and supports effector function. Nonetheless, the complete set of signaling and cell machinery regulators mediating IS assembly and T cell activation is still not known and the reciprocal regulation of signaling and organelle dynamics is not fully understood. This Special Issue aims to present the latest findings on cell polarity, which mediates T cell activation and effector function.

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