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G- protein coupled receptors control neutrophil chemotaxis

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Chemotaxis of leucocytes, chemokine mediated directional cell migration, plays essential roles in innate immunity and also in metastasis of cancer cells. Efficient chemotaxis requires a precise coordination of polymerization and depolymerization of the actin cytoskeletonat leading fronts of migrating cells. GPCR activation initiates multiple signaling pathways ultimately to control polymerization of F-actin based cytoskeleton. However, how GPCR activation mediates the depolymerization of F-actin largely remains elusive. Here, we show the essential role of protein kinase D (PKD) in neutrophil chemotaxis and its underling molecular mechanism.

Biography

Xuehua Xu has completed his Ph.D. from Tsukuba University, Japan, in 2002 and did postdoctoral studies in chemotaxis using model system *Dictyostlium discoideum* using state-of-art imaging technology to systematically monitoring GPCR mediated signaling pathways at National Institute of Allergy and Infectious Diseases. In 2006, shewas recruited to Georgetown University School of Medicine as the director of Dynamic Imaging in Microscope Imaging Shared Resources. Xu further expanded her research to understand macrophage chemotaxis in metastasis of breast cancer cell and also human neutrophil chemotaxis. She has published more than 30 papers in reputed journals and serves as an editorial board member of several journals and grant review committee.

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