Migrasome and Migracytosis

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Cells communicate with each other through secreting and releasing proteins and vesicles. Many cells can migrate. Recently, we report the discovery of migracytosis, a cell migration-dependent mechanism for releasing cellular contents, and migrasomes, the vesicular structures that mediate migracytosis. As migrating cells move, they leave long tubular strands, called retraction fibers, behind them. Large vesicles, which contain numerous smaller vesicles, grow on the tips and intersections of retraction fibers. These fibers, which connect the vesicles with the main cell body, eventually break, and the vesicles are released into the extracellular space or directly taken up by surrounding cells. Since the formation of these vesicles is migration-dependent, we named them “migrasomes”. We also found that cytosolic contents can be transported into migrasomes and released from the cell through migrasomes. We named this migration-dependent release mechanism “migracytosis”. In this lecture, I will discuss our recent progress on migrasome and migracytosis.