“Insulin Stimulates Membrane Fusion and GLUT4 Accumulation in Clathrin Coats on Adipocyte Plasma Membranes”

Abstract: Glucose transporter type 4 (GLUT4) is an insulin responsive glucose transporter that is distributed in adipose tissues and striated muscles (cardiac muscle and skeletal muscle). It is related closed to obesity and diabetes mellitus (Type2) and regulated by insulin via 2 signal pathways, which results in significant effect on trafficking of GLUT4 from intracellular to the plasma membrane. Trafficking of GLUT4 is a complicated process that is consisted of exocytosis and endocytosis, involving in plasma membrane and several intracellular organelles, like trans-Golgi network, sorting endosome and Reticular Membrane etc. This paper focus on membrane fusion and GLUT4 accumulation in clathrin coats where endocytosis occurs, stimulated by insulin, on adipocyte plasma membrane. Total internal reflection fluorescence (TIRF) microscopy is applied in this experiment in order to get a better observation and a computer program is developed to help identify fusion events.

Reference:

