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Modelling Insulin Action on Glucose Transporters

The application of insulin to a cell causes membrane-embedded glucose transporter proteins to be transported to the cell surface. An experimental technique that is ideally suited to investigate this dynamic process is total internal reflection microscopy of single cells, where fluorescent markers are attached to the molecules and movements recorded. To create software capable of annotating the recordings automatically, ideal mathematical models are required. Features of the models and software are outlined and compared with biological recordings.