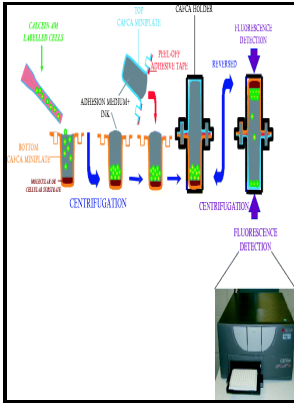


Computer-assisted analyses of cell locomotion and chemotaxis

CRC Press - Depolarization of the cell membrane causes inhibition of cell locomotion and pinocytosis in *Acanthamoeba castellanii* and *Amoeba proteus*



Description: -

-
 Charlwood (Sussex) -- History.
 Chemotaxis.
 Cell Movement.
 Automatic Data Processing -- methods.
 Chemotaxis -- Data processing.
 Cells -- Motility -- Data processing.
 Computer-assisted analyses of
 cell locomotion and chemotaxis
 -Computer-assisted analyses of cell locomotion and chemotaxis
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Tags: #Quantitative #analysis #of #cell #motility #and #chemotaxis #in #Dictyostelium #discoideum #by #using #an #image #processing #system #and #a #novel #chemotaxis #chamber #providing #stationary #chemical #gradients

Quantitative analysis of cell motility and chemotaxis in *Dictyostelium discoideum* by using an image processing system and a novel chemotaxis chamber providing stationary chemical gradients

Transmitted and fluorescent images were simultaneously collected every 20 seconds, averaged using Intervision software, and saved on the hard drive in Silicon Graphics format SGI Inc. Aggregation in submerged cultures assessed at low magnification. A cell moving randomly will exhibit a series of peaks randomly distributed in the positive and negative zone with erratic time intervals between peaks.

Quantitative analysis of cell motility and chemotaxis in *Dictyostelium discoideum* by using an image processing system and a novel chemotaxis chamber providing stationary chemical gradients

This defective behavior was evident in centroid tracks. Green represents expansion zones and red contraction zones in the difference pictures. The two major questions to be addressed were 1 whether or not two distinct class I myosins MyoA, MyoB played functionally redundant roles during motility and 2 whether two similar class I myosins MyoA, MyoF played functionally redundant roles during motility.

Chemotaxis of *Amoeba proteus* in the developing pH gradient within a pocket

Reconstitution of signaling in bacterial chemotaxis. Acknowledgements The authors are indebted to Dr K. In vector flow plots the behavior of hundreds of cells in a small area are simultaneously vectored.

Chemotaxis of *Amoeba proteus* in the developing pH gradient within a pocket

For an explanation of panels and reconstructions, see legend to. The red-coded image represents the last in a perimeter track.

Depolarization of the cell membrane causes inhibition of cell locomotion and pinocytosis in *Acanthamoeba castellanii* and *Amoeba*

proteus

Selected regions of the monolayers were analyzed using vector flow technology ; ;. All three control cell lines exhibited velocity surges on average in the front of the last three waves in a series of four temporal waves, as is evident in the time plot of velocity data averaged for a number of cells of each control strain ;.

Chemotaxis of *Amoeba proteus* in the developing pH gradient within a pocket

A computer-assisted three-dimensional dynamic image analysis system 3D-DIAS has been developed for reconstructing and motion analyzing living, crawling cells. Strain maintenance and development Spores of both control and mutant strains were stored in 10% glycerol at -80°C.

Depolarization of the cell membrane causes inhibition of cell locomotion and pinocytosis in *Acanthamoeba castellanii* and *Amoeba proteus*

We have now added the myoF mutant to this list. After the addition of a chemoattractant, behavior was modified transiently--smooth swimming increased, flexing decreased, and reversals were suppressed.

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