JOHN P. MCGOVERN LECTURESHIP IN BIOMEDICAL COMPUTING AND IMAGING

Active Molecular Transport in Asymmetric Passive Membrane Channels

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Winning an Uphill Battle

Cells use molecular pumps to actively force particular molecules and ions to flow in or out through their membranes. In recent years, some biophysicists have suggested that passive channel proteins may pass certain molecules one way more readily than the other and even against a concentration gradient. Now Ioan Kosztin used the detailed atomic structure of a channel protein from the *E. coli* bacterium to show that it can transport glycerol in "reverse." The tubular molecule is called glycerol uptake facilitator, or GlpF, and the key to its ability to go against the flow is its asymmetrical shape. Kosztin's work shows that GlpF acts like a ratchet to squeeze one glycerol molecule after another in the direction opposite the concentration gradient. Cells may use this effect to avoid overdosing on glycerol.

Drinks and snacks complimentary

DATE: **Wednesday, June 1, 2005**
TIME: **4:00PM – 5:30PM**
PLACE: **Trevisio Restaurant, 6th floor,**
John P. McGovern Medical Center Commons,
6550 Bertner Ave., Houston, TX 77030

Parking in the Commons will be validated by Trevisio Restaurant
For information contact Mrs. Hilary Wriggers at 713.500.2429

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