

7.61 Discussion #5 Signal Transduction

Readings for Discussion #5, Wed. November 18, 2006

We will discuss two papers dealing with various aspects of localization of signal transduction events.

1. Funamoto S, Meili R, Lee S, Parry L, Firtel RA. (2002)
Spatial and temporal regulation of 3-phosphoinositides by PI 3-kinase and PTEN mediates chemotaxis.
Cell. 109: 611-23.

Discusses localization of PI3 kinase and PTEN during cell migration.

2. Dodge-Kafka, K.L., Soughayer, J., Pare, G.C., Carlisle Michel, J.J., Langeberg, L.K., Kapiloff, M.S. and Scott, J.D. (2005) The protein kinase A anchoring protein mAKAP coordinates two integrated cAMP effector pathways.
Nature 437: 574-578.

Addresses the coordination of cAMP signaling pathways by a scaffold protein.

Background and additional reading – not for discussion in class.

- Teruel, M. N. and Meyer, T. (2000)
Translocation and Reversible Localization of Signaling Proteins: A Dynamic Future for SignalTransduction.
Cell 103: 181-184.

A brief review on the general issue of localization.

- Zhang, J., Hupfeld, C.J., Taylor, S.S., Olefsky, J.M. and Tsien, R.Y. (2005)
Insulin disrupts b-adrenergic signalling to protein kinase A in adipocytes.
Nature 437: 569-573.

Another paper on PKA scaffolding proteins.