Signalling across the Internet

focus on
signalling and adhesion

As this focus issue of *Nature Cell Biology* homes in on the increased crosstalk between signalling and adhesion, we felt it was time to highlight specific websites in this area. We draw attention to reviews from the *Encylopedia of Life Sciences*, homepages of various laboratories and educational tools. This is not meant to be a comprehensive list of sites, or even to highlight those that are necessarily the best, but are instead a few of our personal favourites that should provide some useful starting points for those new to the field as well as established researchers.

Encyclopedia of Life Sciences

This online reference from Nature Publishing Group contains reviews that have been specially commissioned and rigorously peer-reviewed to give readers great background information on all biological topics.

www.els.net
Users can search for review articles in any subject of biology. A search for pieces on integrins reveals two reviews by Geoffrey Krissansen. Both are aimed at advanced undergraduates, graduates and researchers. The first review covers the integrin superfamily, where the author discusses the basic properties of integrins in cell growth and differentiation are discussed. A second review probes further into the role of integrins in disease.

General signalling and adhesion websites

www.biology.iastate.edu/Courses/302/Lecture%2041.htm
This URL will lead you to lecture notes on receptor tyrosine kinases and signal crosstalk from the Biology 302 course at Iowa State University. These notes provide a great general introduction to this field.

stke.sciencemag.org/resources/events
The is *Science*'s signal transduction knowledge environment site. The site contains some freely accessible material (for which you must register) and some restricted pieces that require a subscription. Free pieces include the Editor's choice summaries of recently published papers in the field. There are open forums for the community to discuss topics related to signal transduction research and related career information. The protocol section is particularly useful, as are the connections maps. These maps detail all the relevant published work for a particular pathway, for example Wingless/Wnt.

Integrin-specific websites

www.geocities.com/CapeCanaveral/9629
This site was generated in 1997 by biology student Jan Koster, and is a wonderful resource for those entering the field or those who wish to know the history of integrins. Jan has collated information on integrin history, which includes a hand-drawn figure depicting researcher's original ideas of what integrins would look like, integrin subunits and the interaction of integrins with the extracellular matrix. There is also a section dedicated to understanding integrin nomenclature. The site also contains a question and answer page and a chatroom, so you can discuss research and experiments with others in the field.

life.kjist.ac.kr/Htm/Lab/cell
This site belongs to the cell adhesion network of the Kwangju Institute of Science & Technology in Korea. Yet again you can find here a basic introduction into what integrins are and what they do. This includes diagrams of integrins and their binding partner. The site also shows which subunits have been identified so far.

Lab-specific adhesion and signalling websites

www.upstate.edu/cdb/blyston/research.html
Steven Blystone's lab homepage shows that this group is interested in characterizing leukocyte integrins and understanding how they become activated during an immune challenge. The site contains details of ongoing work as well as some background information on integrins.

www.uni-wuerzburg.de/strahlenkunde/gruppen/ludwig.html
These are the research pages of the Ludwig group, whose main interests include the function of mitogen-activated protein kinase cascades in differentiation, inflammation and infection.

www.unice.fr/biochimie/ifr/evo.htm
This is the homepage from Ellen Van Obberghen-Schilling's laboratory in France. The site contains some beautiful images and details on the regulation of adhesion-dependent cell survival.

Cytoskeleton

expmed.bwh.harvard.edu
This is the homepage of the Cell Biology and Cytoskeleton Group at Harvard Medical School. This site contains many useful diagrams to explain the signalling pathways involved in signalling to the actin cytoskeleton, along with detailed background discussions.

Cadherin-specific websites

calcium.uhnres.utoronto.ca/cadherin/no_flash.htm
Website from Mitsuhiko Ikura at the Ontario Cancer Research Institute, dedicated to the molecular and structural properties of cadherins with good links to other sites of interest. The site was generated to analyse, interpret, manage and distribute information on E-cadherin. There is a lot of general information to be found on this site, including metholodogy and consensus sequences.

www.devbio.com/chap03/link0308.shtml
These are two sections taken from chapter three of the online version of *Developmental Biology* by Scott F. Gilbert. The biochemistry of cadherins is explained with some good images and diagrams. There is also a description of N-CAM.