

Cell-Cell Interactions in Early Development. Edited by John Gerhart. Published 1991 by Wiley-Liss, New York. No. of pages: 325. Price at April 1993: \$105.00. ISBN: 0-471-56123-1.

It has become apparent that all metazoan and metaphyten organisms make extensive use of cell-cell interactions in the course of developing their complex multicellular organization. The only alternative to interactions is that of mosaic development based on the autonomous action of localized cytoplasmic materials of the oocyte and egg. While this alternative has been shown to be essential and sufficient in establishing a small number of initial regional differences within early embryos of many organisms (*Drosophila* being the best analyzed example), it is soon supplanted by patterning processes based on intercellular signals, for example, by induction and morphogenesis.

Organizer cells organize the anteroposterior and dorsoventral dimensions of the vertebrate body axis by engaging in three kinds of interactions among themselves and with their neighbors: (1) they undertake specialized morphogenesis based on interdigitation with one another, with the consequence that their population changes from a multilayered square array into a single- or double-layered elongated array, thereby lengthening the body axis; (2) they signal lateral neighboring cells to rearrange and differentiate as somites, heart, and kidney (an inductive agent called "dorsalization of the mesoderm"); and (3) they signal the neighbors near the animal pole to repack and differentiate as neural tissue ("neural induction"). Eventually, organizer cells differentiate as the notochord, surrounded by their induction products, the neural tube and the segmented rows of somites.

There are many interesting chapters contained in this book and gathered under the following main headings:

- gastrulation and neurulation;
- induction and axis specification;
- specification of cell fates;
- cell sorting and pattern regulation;
- intercellular signalling pathways.

This book would be useful for biologists, physiologists, molecular biologists, and people working in reproduction, as well as for advanced students.

Methods in Molecular Biology: Vol. 11: Practical Protein Chromatography. Edited by Andrew Kenney and Susan Fowell. Published 1992 by Humana Press, Totowa, New Jersey. No. of pages: 327. Price at publication: \$59.95 (hardbound). ISBN: 0-89603-213-2.

One of the many impacts of recombinant DNA technology over the last 15 years has been a strongly refreshed interest in methods for the separation and purification of proteins. This interest has encompassed not only analytical separations, but also small- and large-scale preparative methods directed to both pure and applied research throughout biology and biomedicine. Many of the new or substantially modified techniques developed have been reported in the literature, but a sufficiency of *detailed* practical help in establishing these methods for the first time in a new laboratory has often been difficult to find. With these problems in mind this book, designed as a key volume of the series, provides concise practical help to those carrying out new techniques for the first time.

Each chapter has been written by expert authors known to have direct and regular practical experience with their chosen techniques. The structure of each chapter is designed to make it easy for a worker new to the method to follow it to an effective conclusion. An *Introduction* treats the theory behind the method being described. The *Materials and Methods* sections allow the reader to prepare for, and then perform techniques in a rational stepwise manner. The *Notes* sections provide the sort of background 'hints' and 'tricks' that are so often essential for success, but are rarely reported in the literature. They also contain information about modifications to the basic methods that may help the reader to apply the technique in novel ways to new problems.

The following main topics are covered:

- immunoaffinity chromatography and selection of antibodies;
- lectin affinity and dye-ligand chromatography;
- exploiting weak affinities;
- alternative coupling chemistries;
- biospecific affinity elution;
- size-exclusion HPLC of proteins;
- chromatofocusing;
- determination of purity and yield;
- specialized chromatographic techniques.

This book would be useful for biochemists, biologists, molecular biologists, and physicists.