

Epigenetics and Development

Edited by

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The question of how a single cell, the fertilised egg, gives rise to hundreds of different cell types, all with specialised roles during the development of an organism, even though the DNA information within each of these cells is identical continues to fascinate scientists. The nature of the epigenetic changes that come into play during development and the mechanisms that regulate them have only recently started to be unravelled.

Antibody based technologies are now available enabling us to detect epigenetic marks associated with chromatin, both in single cells using immunofluorescence, and across the genome using chromatin immunoprecipitation. Although heterochromatin and euchromatin were identified cytologically more than a century ago, these different types of chromatin, and the parts of the genome they represent can now be analysed in exquisite detail. Combined with molecular techniques enabling the analysis of DNA methylation, as well as the detection of coding and non-coding RNAs in a genome-wide fashion, this has led to tremendous advances in our understanding of epigenetics during development.

This volume of *Current Topics in Developmental Biology* includes nine timely and exciting reviews on the rapidly moving topic of epigenetic mechanisms and development in different systems.

KEY FEATURES:

- Chapters by experienced investigators
- Discusses the dynamics of epigenetic changes in a range of organisms and the role of epigenetic mechanisms during development and in the germ line

Image: An image of a 2-cell mouse embryo showing primary transcripts.

Credit: Provided by C. Patrat, T. Okamoto, E. Heard, Institut Curie.



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