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► **COVER:** 'All seeing, all controlling' by Claudia Bentley, inspired by the review on p259.



EZZIE HUTCHINSON



NICOLA MCCARTHY

There are two complementary approaches to studying the molecular mechanisms of cancer — to try to understand the molecular development of a specific type of cancer, or to examine the role of one particular molecular factor across a range of cancers. In this issue we have articles that represent both approaches.

On page 292, Sylvia Asa and colleagues review the pathogenesis of thyroid cancer, one of the few malignancies whose incidence is increasing. Starting with the risk factors of radiation exposure and iodine deficiency they examine the development of the disease through genetic changes and altered signalling pathways. Similarly, on page 281, Pepper Schedin reviews pregnancy-associated breast cancer, the incidence of which is predicted to increase as the average age of child-bearing increases. A specific focus in this article is the role of the microenvironment, and it is the second article in our series on the tumour microenvironment.

Approaching things from the other side, on page 259 Aurora Esquela-Kerscher and Frank Slack survey the role of microRNAs in cancer. Members of this recently discovered class of regulators can function as tumour suppressors and oncogenes, and their expression profiles might have greater diagnostic and prognostic value than the expression profiles of protein-coding genes. In contrast to the broad class of microRNAs, on page 321 Axel Ullrich and Klaus Strebhardt examine one particular protein, polo-like kinase 1. This kinase is overexpressed in a wide range of cancers and has prognostic value in many, including colorectal cancer, melanoma and non-Hodgkin lymphoma. They look in detail at its unique structure and how it can be targeted in cancer therapy.

Although these approaches have very different starting points, they are united in facilitating the identification of potential targets for therapy.

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