nature medicine

Tapping a research-rich vein

Angiogenesis—the development of new blood vessels—is essential for normal embryonic development, skeletal growth, wound healing and reproductive functions, but also contributes to the pathogenesis of numerous disorders, including cancer, arthritis and psoriasis.

In the late 1930s, Warren and colleagues made the first observations linking angiogenesis to tumor growth. More than 30 years later, Judah Folkman launched tumor angiogenesis as a new field and introduced the concept of angiogenesis inhibitors as potent tools for cancer treatment. But one would have to wait until the 1980s and 1990s, and the discovery of an expanding number of pro- and antiangiogenic molecules, for this discipline to develop from a small specialized focus to a broad and complex research arena. For 2002 alone, Medline lists more than 3,800 angiogenesis-related abstracts.

Although the initial wave of enthusiasm for antiangiogenic therapies in cancer has been tempered by sobering results from human trials, angiogenesis remains one of the most promising fields for cancer therapy and is now enjoying renewed popularity in fields far beyond cancer. A testament to the promise of targeting angiogenesis is the numerous phase 2 and 3 clinical trials of therapeutic angiogenesis, currently under way for cancer, macular degeneration, coronary heart disease and limb ischemia.

Nature Medicine is pleased to present in this issue a series of reviews by distinguished scientists exploring recent developments in angiogenesis (pages 653–725).

Subsequent to the discovery of vascular endothelial growth factor and its receptors, reviewed here by Napoleone Ferrara, angiogenesis made its first foray into the clinic. Ondine Cleaver and Douglas Melton provide us with insight into the role of endothelial cell signaling in embryonic development and cell differentiation. Christopher Pugh and Peter Ratcliffe dissect the role of hypoxia-inducible factor in regulating angiogenesis, and Rakesh Jain explores the interplay between the physical forces and molecular signals necessary to guide vessel maturation. Finally, Seppo Ylä-Herttuala and Kari Alitalo, Shahin Rafii and David Lyden, and Donald McDonald and Peter Choyke review gene therapy, cell therapy and imaging, respectively—updating us on the available tools for therapeutic strategies directed at angiogenesis.

Historically, angiogenesis has been thought important in cancer, arthritis and blindness, but more recently it has also been shown to have a major impact on diverse common disorders such as obesity, asthma, atherosclerosis, infectious disease, neurodegeneration and hypertension. Peter Carmeliet examines the impact of angiogenesis on health and disease, showing how each signaling pathway is intimately related to both normal and pathologic vessel formation and maintenance.

Our colleagues at *Nature Reviews Cancer* have complemented this focus with three reviews that take a more comprehensive look at the interface between angiogenesis and cancer. Mary Hendrix and colleagues tell us how vasculogenic mimicry contributes to tumor progression, Gabriele Bergers and Laura Benjamin review the cross-talk between tumor cells and the stromal microenvironment, and Raghu Kalluri explores the role of basement membranes in tumor angiogenesis.

The web site dedicated to this joint focus provides, in addition to these review articles, a select list of 'classic' papers nominated by a group of experts, many research highlights (summaries of the relevant literature) and access to related articles previously published in *Nature* journals. The entire content will be freely available for 2 months at http://www.nature.com/focus/angiogenesis. We hope you will find our focus informative and stimulating.

Our new look

The June issues of all seven *Nature* research journals are sporting a fresh new look. In our new design, we have tried to implement a format that would be as consistent as possible throughout the different *Nature* publications, to help readers and authors get the scientific information they need rapidly and efficiently. We have also renamed some of our sections, enabling easy recognition of the different types of articles and their format restrictions across all *Nature* journals.

Nature Medicine has replaced our old format of long and short articles with 'Articles' and 'Letters', respectively. Very short reports containing original research data will now be published as 'Brief Communications'. 'Perspectives' will be a new format for scholarly reviews and discussions of the primary research literature that are too technical for a Commentary but do not meet the criteria for a Review, either because the scope is too narrow or because the author is either advocating a controversial position or speculative hypothesis, or discussing their own work.

The new 'Correspondence' section is a flexible format that will contain short pieces. We invite your opinions on policy, research and all issues relevant to biomedical science. This section will also accommodate short, nontechnical comments about published research articles, with the possibility of a rebuttal from the corresponding author of the original paper.

Finally, we are pleased to announce two new sections in the front half of the journal: 'News in Brief' and 'News Features', which will include stories that cannot be covered in the current News format.

The Guide to Authors, with more details on the new sections, is available at http://www.nature.com/nm/info/. We hope this new look will be both useful and easy on the eye.

We welcome your feedback, and ask that you email us at medicine@natureny.com.