ceptors. Thus, VEGF-C appears to be an angiogenic and lymphangiogenic growth factor. Another related novel growth factor, VEGF-B was also cloned and found to be expressed in heart, muscles and less in other tissues. VEGF-B bound VEGFR-1, formed cell surface-associated, disulfide-linked homodimers and heterodimers with VEGF when coexpressed.

Tie, one of the receptor tyrosine kinases we have cloned, is expressed in mouse hematopoietic stem cell fractions and in all studied fetal endothelial cells. In transgenic mice the Tie gene promoter directs endothelial specific expression of heterologous genes. Tie was required during embryonic development for the sprouting and survival of new vessels, particularly in the regions undergoing angiogenic growth of capillaries. Our results thus demonstrate an increased complexity of signaling for endothelial cell proliferation, migration, differentiation and survival. Knowledge of these signals is essential for the control of angiogenesis in a variety of diseases including cancer.

[1] For a review, see: Korpelainen, E. and Alitalo, K.: Signaling angiogenesis and lymphangiogenesis. *Current Opinion in Cell Biology* 10: 159–164, 1998

197

New imaging methods illuminating cellular structure and function

Rainer Pepperkok. *European Molecular Biology Laboratory, Meyerhofstrasse 1, 69012 Heidelberg, Germany*

The lecture will focus on methods to label and image cellular structures in living and fixed cells and organisms. The use of green fluorescent protein (GFP) tagged fusion proteins to study in living cells molecular dynamics, post-translational modifications and molecular interactions will be discussed. The basic concepts of the microscopy technology involved will be introduced and potential applications in high content/high throughput screening for the functional identification of novel genes from cDNA libraries will be shown.

198

Rationale of the optimal interaction chemotherapy-radiotherapy

P. Lukas. *Universitätsklinik, Department of Radiotherapy, Innsbruck, Austria*

Over the last decades many potentially radiosensitizing drugs have been developed and an increasing number of trials succeeded to show a significant benefit of combined modality treatment.

However, still little is known about the optimization of treatment schedules for the combination of chemo- and radiotherapy, depending on the drug's mechanism of action. The dramatic expansion of knowledge regarding the molecular events that cause cancer and contribute to its fundamental biology could open new avenues for further treatment optimization. In an attempt to produce greater specificity of action and to take advantage of the latest discoveries in cancer biology, both commercial and academic investigators have turned their efforts toward specific molecular or biochemical targets known to play a role in cancer etiology and progression.

Such compounds, now entering clinical trial in large numbers, differ from traditional cytotoxic chemotherapeutic drugs in significant ways, but they represent at least potential tools to support traditional trials in a significant manner. Attention should now be directed toward the elaboration of combined chemo- and radiotherapy treatment schedules including these newly discovered entities that act at one of many new molecular targets, such as cellular and subcellular structures responsible for regulation of hypoxia, microcirculation, and in consequence affect drug delivery and action. Development of such schedules will likely require a new strategy for preclinical and clinical evaluation very different from that employed for traditional radio-chemotherapy alone.

In this teaching lecture the existing application schemes for combined drug- and radiotherapy will be discussed and some of the most promising models for optimization will be coined.

199

Continuing medical education – The European agenda

J. Geraghty. *Professional Unit of Surgery, Nottingham City Hospital, Nottingham, United Kingdom*

There is now abundant evidence that variability in outcome in patients with cancer occurs. This factor is independent of tumour type as it has been demonstrated in many cancers including colon, ovarian and breast cancer as well as teratoma and is present in both their diagnosis and management. The well-established link between knowledge of health professionals and outcome has recently raised the profile of the need for these individuals to keep informed of advances in the medical sciences.

Although at present a professional obligation, the concept of continuing medical education is fast becoming a necessity in the routine of health professionals. They must now be able to demonstrate to their peers, politicians and most importantly their patients that they are up to date. To meet this need in oncology, he Federation of European Cancer Societies (FECS) has embarked on several initiatives over the last 2 years. It has, through its member societies, set up the Accreditation Council of Oncology in Europe (ACOE) whose remit is to develop a common accreditation system in Europe which recognises the multidisciplinary nature of cancer management. It will accredit courses in Europe and it is anticipated that its presence will facilitate recognition of credit points across European boundaries.

The long-term goal will be to facilitate freedom of movement of health professionals within Europe in their quest to obtain knowledge, which will be recognised at national level. This presentation will give an account of the history of this project as well as future prospects.