FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 03.05.2012, 16^{15} Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Gabriele Multhoff

Klinikum rechts der Isar (TU München), Klinik für Strahlentherapie

Improving radio-chemotherapy of tumor diseases by modern immunotherapy: the new biomarker heat shock protein 70 (Hsp70)

The aim of the research team is to develop innovative immunotherapy approaches to improve clinical outcome of standard radio-chemotherapy. Tumor and normal tissues differ in the amount and subcellular localization of the major stress inducible heat shock protein 70 (Hsp70, new: HSPA1A). The research team has succeeded in elucidating the immunostimulatory capacity of cell surface-bound and secreted Hsp70. Ionizing irradiation as well as a variety of other stress factors such as chemotherapy, heavy metals, oxygen radical, nutrient deficiency, aspisol, Hsp90 inhibitors, COX2 inhibitors, and heat shock result in the induction of the synthesis of HSPs in tumor and normal tissues. However, beside its cytosolic expression, Hsp70 translocates to the outer cell membrane leaflet selectively in tumor cells. This finding, which was first observed in tumor cell lines of different entities, is also verified on primary tumor biopsies. The immunological consequences of this tumor-specific Hsp70 membrane localization, that is further enhanced by radio-chemotherapy gave raise to antibody- cell based- and enzyme-based immunotherapeutic approaches. Furthermore, fluorescence-conjugated Hsp70 tools detecting membrane bound Hsp70 such as antibodies, Fab fragments and Hsp70 peptides were also tested for in vivo imaging of tumors and metastases in small animal models.

gez. Peter Thirolf
Tel. 289-14064

gez. Norbert Kaiser
Tel. 289-12367