RADIOMAG – COST ACTION in cancer research
combining magnetic nanoparticle hyperthermia and radiotherapy

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Cancer is a leading cause of death worldwide \cite{1}. Future projections predict globally an increase up to 23.6 million new cases each year by 2030. Therefore, cancer research cannot wait, and new approaches are urgently required. RADIOMAG aims at building up the next generation of researchers in a highly multidisciplinary field by enabling current and organising new research dealing with the efficiency of radiotherapy and its synergetic combination with magnetic fluid hyperthermia (MFH). The latter is an experimental treatment, involving fluids containing magnetic nanoparticles. These release heat when exposed to alternating magnetic fields. Despite MFH has recently thrown positive outcomes from clinical trials with glioblastoma multiforme patients, the treatment is still far from becoming a standard practice. The presentation will give an overview about the activities of this recently started COST action and

Fig.1 (a) Set-up for \textit{in vivo} MFH testing including infrared (IR) thermometry, (b) temperature differences between test animal and background, demonstrating the efficiency of IR imaging for treatment control (c) test animal placement. (figure kindly provided by Frank Couillaud)
present first scientific results; hereby demonstrating the significance of EU support for better cooperation in science and technology and thus the optimisation of individual national research resources in order to put forward well-grounded innovating strategies in nanomedicine for a new generation of multifunctional nanoparticles and in turn the development an optimised dose concept combing thermal and radiation energy in near future.

References