



PAULINE THUMSER-HENNER

Group Rohrer Bley

Division of Radiation Oncology
Vetsuisse faculty
Winterthurerstrasse 258, 8057 Zurich

pthumser@vetclinics.uzh.ch
<https://www.tierspital.uzh.ch/en/Radio-Onkologie.html>



KEYWORDS – Hyperthermia, radiotherapy, DNA-damage

MAIN FIELDS OF RESEARCH; ABSTRACT

In the treatment of solid tumors, alternative combined treatment modalities of radiotherapy are being investigated in order to improve the outcomes, challenged due to the intrinsic radioresistance. Hyperthermia (41-43°C), applied to the tumor prior to irradiation, has been shown previously to increase the therapeutic ratio by sensitizing tumor cells towards radiotherapy. The mechanism of radiosensitization may act on different levels, that include the activation of intracellular and tumor environment parameters. Recent research performed in our team showed that thermoradiotherapy is more effective than radiotherapy alone in terms of survival of both human and canine cell lines.

The purpose of my PhD project is to characterize the effect of hyperthermia and its combination with radiotherapy on canine cancer cell lines and *ex vivo* tumors. Furthermore, we aim to characterize the target(s) of heat in the DNA-damage repair machinery

TECHNIQUES AND EQUIPMENT

Clonogenic assay, Comet assay, Western-Blot, cell culture, immunohistochemistry, linear accelerator (Linac).