

MAASTRO, Maastricht Radiation Oncology, is a co-operation between MAASTRO clinic, the University of Maastricht (UM) and the University Hospital Maastricht (AZM) (see www.maastrro.nl). MAASTRO consists of several divisions, including MAASTRO Clinic, which offers state-of-the-art radiotherapy to more than 3500 cancer patients each year from the mid and South Limburg area in the Netherlands. In addition, research and training at MAASTRO is carried out in MAASTRO Physics, MAASTRO Trials, MAASTRO School, and the dept. of Radiotherapy UM/MAASTRO Lab.

The dept. of Radiotherapy is a basic and translational research laboratory embedded within the GROW research institute of the Faculty of Health, Medicine and Life Sciences at Maastricht University. Research carried out in the past has focused on the tumour microenvironment (hypoxia), autophagy, NOTCH and EGFR signalling, pathways of relevance to radiation oncology. The dept of Radiotherapy has made several important discoveries in these fields, including demonstration that targeting hypoxia responsive mechanisms ie UPR and autophagy, sensitizes tumors to irradiation. In addition, we have initiated translational and clinical studies based on these results.

The lab is shared with the group ‘Precision Medicine’ and collectively accommodates 7 permanent scientists, 4 technicians, more than 10 PhD students and Post-Docs and is fully equipped for cell culture, molecular and cellular biology (e.g. flow cytometry, hypoxia, gene expression, proteomics and microscopy) and working with animals (optical imager, *an advanced small animal irradiator* with cone beam CT & gantry, MRI 7 Tesla and micro-PET). The dept of radiotherapy has set up the necessary infrastructure for controlled exposures to hypoxia and hypoxia/reoxygenation, including development of novel equipment that allows rapid and controlled changes in oxygenation. Access to expertise, equipment and resources within the much larger GROW research institute and other facilities in the University are also readily available, including the genome centre, advanced microscopy, and the animal facility.

The dept of Radiotherapy offers a 4-year position for a **PhD-student**:

For unravelling signaling mechanisms that synergize with autophagy-inhibitory medication and improve glioblastoma responsiveness to therapy

In this position you will perform research at the cutting edge of autophagy research and its targeting potential within cell cultures and solid tumors *in vivo*. Previously we showed that autophagy is primarily activated within the oxygen deficient (hypoxic) regions of solid tumors, the radioresistant niche. Targeting autophagy resulted in a decrease in tumor hypoxia and sensitized tumors to irradiation. In glioblastoma, adapted intracellular signalling severely enhanced the efficacy of autophagy-inhibitory drugs. The candidate in this position, will unravel the signalling cascades that enhance autophagy-inhibitory drugs efficacy and will aim to translate this into clinical usable strategies.

The research will be performed in a multinational setting and close collaboration between the group of Dr. K. Rouschop (Maastricht University) and Prof. B. Wouters (Princess Margaret Cancer Centre (PMCC), Toronto, Canada), one of the worldwide leading institutes in cancer research. Research within the group of Prof. Wouters (<http://www.wklab.org/>) focuses on investigating the tumor microenvironment with a primary interest in understanding the cellular and molecular responses to hypoxia and their influence on the biological behavior of tumors.

Within the first year, the candidate will spend up to **10 months at the PMCC, Toronto** to perform initial screens. Hits will be pursued in the following **3 year period in Maastricht, the Netherlands**.

A large number of techniques in both labs and collaborations with experts in the field of autophagy will be at your disposal.

We are searching for a highly motivated and independent coworker, ready to work hard and with interests in translational research and molecular or cell biology. Affinity for *in vivo* work including authorization to work with animals (Art. 9) or willingness obtain Art. 9 is required. We offer an enthusiastic working environment in an ambitious international research team, communication in English is therefore a requirement.

Knowledge of basic techniques such as *in vitro* cell culture, RT-PCR, cloning and transfection is expected.

Further information will be gladly given by Kasper.Rouschop@maastrichtuniversity.nl or telephone number: +31-(0)43-3884264. Please also visit www.maastrrolab.com and www.grow-um.nl.

Your application letter and Curriculum Vitae can be sent to Kasper.Rouschop@maastrichtuniversity.nl.