



Within the EU-funded Innovative Training Network THERADNET, we are looking to strengthen our team at the **West German Proton Therapy Center Essen (WPE)** at earliest possible date with an

Research Assistant (PhD position)

The 3-year PhD position (ESR6: Impact of radiation quality (photons versus protons) on molecular and cellular responses) is funded by the Marie-Sklodowska-Curie Innovative Training Network (ITN) "THERADNET". The Training Network THERADNET aims to provide a multidisciplinary and intersectorial training to early stage researchers (ESRs) in the field of experimental radiation oncology. **THERADNET** stands for: "International **NET**work for training and innovations in **THE**rapeutic **RAD**iation".

Location: West German Proton Therapy Center, Essen, Germany

Proton beam therapy is increasingly applied in cancer treatment, as it promises to reduce normal tissue damage at critical radiosensitive structures. However, some recent reports point to a potential biological effect of the increased linear energy transfer (LET) of protons at the distal edge of the spread-out Bragg peak (SOBP) in tumor and normal tissue models in vitro and in vivo. So far, potential differences in the biology of induced DNA damage and the resulting cellular responses between irradiation with photons or protons are not well understood. The project will compare the consequences of irradiation with photons and protons at the molecular and cellular level in tumor cells and will explore the consequences of genetic or pharmacologic inhibition of molecular factors involved in DNA repair.

Our Job:

Under the supervision of Prof. Dr. med. Beate Timmermann and Prof. Dr. rer. nat. Cläre von Neubeck, you will investigate the DNA damage induction and repair, cell survival and cell signaling of human sarcoma models in response to irradiation with photons and protons. Your project should elucidate if cells with specific defects in the DNA damage response might be more sensitive or resistant to proton irradiation. These results are of clinical relevance! They might help to select patients who benefit from proton or photon therapy and to define rational approaches for combining proton therapy with drugs targeting components of the DNA repair machinery.

Your tasks in detail:

- Establishment of a human sarcoma cell panel as 2-dimensional and 3-dimensional cultures
- Photon and proton irradiations at different positions of the SOBP and increasing LET
- Correlation of cell survival assays with the mRNA and protein expression levels of the DNA repair machinery
- Histological validation of involved repair proteins and targeted gene editing (CRISP/cas9) of potentially relevant therapeutic candidates
- Combined treatment of drugs involved in the regulation or execution of DNA repair and proton or photon irradiation
- Translation and validation of cell culture results in mouse models

Your Profile:

- University degree (Diploma / Master) in biology, biophysics, biochemistry, biotechnology, biomedicine or related fields
- Mobility and willingness to learn technical skills and conduct experiments at other THERADNET partner sites
- Experienced in two or more project relevant techniques (see detailed tasks)
- Good knowledge of cancer biology
- Preferably experience with animal handling and/or radiobiology
- Laboratory animal science course according to the Federation of European Laboratory Animal Science (FELASA), category B, or equivalent is a plus
- Good commands in both written and spoken English
- Applicants must fulfill the "H2020 MSCA Mobility Rule" and the "H2020 MSCA eligibility criteria"

Our Offer:

- A contract for the duration of 36 month
- The salary for this scholarship depends on the EC grant agreement and consists of a number of fixed allowances. The entitlement to the allowance depends on the scholarship holder's personal circumstances.
- The THERADNET consortium offers: a team of > 25 international researchers, continuous mentoring by three scientific advisors, 2-3 international secondments at the other THERADNET institutions, a specifically designed training program

We look forward to receiving your application in English or German quoting the **reference number Theradnet ESR6**. Please use the [application form](#) provided on the euraxess homepage and [send it to us](#).

Further information:

[via E-Mail](#)
www.wpe-uk.de