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| ***School/Department:*** | ***Department of Pathology Erasmus MC, and Radiotherapy, Amsterdam UMC*** |
| **Supervisor information:** | Associate Professor, head LEO, head NICE, Timo L.M. ten Hagen  Email: [t.l.m.tenhagen@erasmusmc.nl](mailto:t.l.m.tenhagen@erasmusmc.nl)  Assistant professor dr. Arlene L. Oei  Email: [a.l.oei@amsterdamumc.nl](mailto:a.l.oei@amsterdamumc.nl)  Selected publications:   * J Nanobiotechnology, Doi: 10.1186/s12951-021-00846-z * Cancers, 2020. Doi: 10.3390/cancers12030582. * Biol Proced Online, Doi: 10.1186/s12575-019-0114-0 * Advanced drug delivery reviews, 2019. Doi: 10.1016/j.addr.2020.01.003 * Int J Nanomedicine, Doi: 10.2147/IJN.S190736 * Int J Mol Scie, 2018. Doi:  10.3390/ijms19082420 * Radiation Oncology, 2017. Doi: 10.1186/s13014-017-0813-0 * Cancer Research, 2015. Doi: 10.1158/0008-5472.CAN-15-0816 |
| **Project Title:** | **Exploring the role of HPV in treatment response for cervical cancer** |
| **Abstract:** | HPV is a common sexually transmitted virus that can lead to different types of cancer, including cervical cancer. In fact, more than 95% of cervical cancers are HPV-positive. To reduce cervical cancer incidence, HPV vaccines have been developed which are estimated to prevent 70-85% of cervical cancer. However, according to the World Health Organization, vaccination will only deliver a 0.1% reduction in cervical cancer mortality up to 2030 (WHO, 2021). At present, the 5-year overall survival of patients with localized cervical cancer is approximately 92%. Unfortunately, this percentage rapidly drops to 56% for patients with regional disease and to only 17% for patients with distant (metastasized). Thus, we are not yet close to eliminating the burden that cervical cancer imposes on women worldwide. In fact, there is clear need to develop novel treatment strategies for patients, particularly those with non-localized cervical cancer.  The development of novel therapies depends on a better understanding of the disease. We hypothesize that the HPV viral load in cervical cancer determines immune responsiveness to anti-cancer treatments. More insights on the meaning of HPV viral load can be decisive for choice of treatment. To that end tumor (immuno)biology to radiotherapy, chemotherapy, hyperthermia and immune modulators needs to be thoroughly investigated in both in vitro an in vivo models in response to improve treatment strategies.  地图  描述已自动生成  Figure: Cervical cancer cell lines will be used in 3D-cultures; patient derived organoids are made for cervical tumor biopsies to study treatment responses in vitro; patient material is also used for quantification of immune cells to be correlated to treatment outcome. |
| **Requirements of candidate:** | * We are looking for a highly motivated, hardworking student, who has completed a BSc and MSc in biomedical sciences or a related studies, to join our team. In vitro and in vivo experiences are a pre. * A good command of English is required. English speaking countries & Netherlands: no requirement; other countries: IELTS 7.0 (min. 60.0 for all subs) or TOEFL 100 (min. 20 for all subs). * We offer: supervision, lab facilities and cover laboratory costs. * The scholarship will have to cover: your salary and living expenses. |

**English requirements：**

**Please refer to Erasmus University China Center official website for your information** [www.eur.nl/eucc](http://www.eur.nl/eucc)

*Erasmus University China Center -> CSC Scholarship -> “I am a prospective CSC PhD Candidate” -> Table 1*

Please note:

Each institute requires difference level of English, make sure to find the right institute. 2022 CSC-PhD programme information will be shared and updated soon!

**Department of Pathology**

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| **Project Title:** | **Studying the abscopal effect of thermoradiation in a triple negative breast cancer mouse model** |
| **Abstract:** | Surgery, radiotherapy, and chemotherapy can successfully achieve control of primary breast tumours. However, many patients progress with disease recurrence and metastasis, which are refractory to treatment and correlated with (very) poor prognosis. Triple negative breast cancers, representing about 15-20% of all breast cancers, recur more rapidly (2.6 vs. 5.0 years) and are associated with lower overall survival than other breast cancers (4.2 vs. 6 years). About 10-15% of all breast cancer patients suffer from an aggressive form and will develop metastases within 3 years after diagnosis of the primary tumour. While radiotherapy and hyperthermia have been successful to treat breast cancer recurrence, a new strategy to target metastases is needed.  The role of the immune system in tumor progression and response to therapy has received considerable attention. Recruitment of sufficient T-cells remains a challenge in immunologically cold tumours, such as in most triple negative breast cancers. Evidence suggests focal radiotherapy and hyperthermia can induce an abscopal effect.  We aim to better understand the abscopal effect to determine e.g. the cytokine release that triggers the immune response after different radiation schedules and hyperthermia doses; and subsequently effects on cell migration, colony formation and viability.    Figure: In vitro experiments will be used to study changes in cell characteristics after various treatment combinations and treatment schedules, in particular cytokine release and immune related cell surface receptors. In animal models the abscopal effect will be studied by treatment of the primary tumor and measuring tumor growth of the distant tumor. Subsequently mechanisms of action will be elucidated to explain treatment responses. |
| **Requirements of candidate:** | * We are looking for a highly motivated, hardworking student, who has completed a BSc and MSc in biomedical sciences or a related studies, to join our team. In vitro and in vivo experiences are a pre. * A good command of English is required. English speaking countries & Netherlands: no requirement; other countries: IELTS 7.0 (min. 60.0 for all subs) or TOEFL 100 (min. 20 for all subs). * We offer: supervision, lab facilities and cover laboratory costs. * The scholarship will have to cover: your salary and living expenses. |