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| ***School/Department:*** | ***Department of Molecular Genetics, Erasmus MC*** |
| ***Supervisor information:***  [World no 30 Biomedical Sciences](https://www.natureindex.com/supplements/nature-index-2019-biomedical-sciences/tables/healthcare) | * *Dr. Nitika Taneja, Ph.D., Principal Investigator and Group Leader* * ***Email:*** *n.taneja@erasmusmc.nl* * ***Website:***[*https://www.erasmusmc.nl/en/research/researchers/taneja-nitika*](https://www.erasmusmc.nl/en/research/researchers/taneja-nitika) * ***Grants:*** * *Women in STEM Incentive grant by NWO, 2021* * *Erasmus+, 2020* * *Young investigator award by Daniel den Hoed Stichting Fonds, 2018* * ***Most important publications:*** * Lo et al. (2021) ***Science Advances*** *PMID: 33952518* * DiPiazza et al. (2021) ***PNAS*** *PMID: 34035174* * Taneja et al. (2017) ***Molecular Cell*** *PMID:28318821* * Taneja and Grewal (2017) ***Cell Cycle*** *PMID: 28805495* * Mizuguchi et al. (2017) ***PNAS*** *PMID: 28490498* * Mizuguchi et al. (2014) ***Nature*** *PMID: 25307058* * Lee et al. (2013) ***Cell*** *PMID: 24210919* * Raychaudhuri et al. (2013) ***Plos Biology*** *PMID:* *23300376* |
| ***Project Title:*** | **Targeting chromatin modifiers for novel chemotherapeutic regimens** |
| ***Abstract:*** | DNA replication is an essential but a precarious cellular process of central importance both to the development of cancer and its treatment. Indeed, failures in the replication process, for instance mutations in critical elements of the chromatin remodeling pathways, contribute to genome instability, an early event in tumorigenesis. The primary research goal of my lab is to obtain mechanistic understanding of pathways mediated by chromatin remodeling which allow stabilization of DNA replication machinery in normal as well as cancer cells. Such pathways play important role in in the hyper-proliferation of cancer cells and could also drive resistance towards chemotherapy. Therefore, chromatin modifying factors could become the potential candidates to be targeted for better therapies for the treatment of cancer as they are frequently mutated in cancerous cells but not in normal cells. We have recently identified a novel pathway and proteins involved in this pathway, which if targeted, can be exploited in the development of novel cancer therapeutic regimens.  The focus of this project is to further understand the mechanistic link between chromatin remodeling pathways and the stability of DNA replication machinery to proper chromatin organization and concomitant genome stability. Through our research, we are trying to obtain a mechanistic understanding of the chromatin modifying (post-translational histone modifying) processes that render cells sensitive or resistant to commonly used chemotherapeutic treatments.  **Main methodology and techniques**: The candidate will be part of a research team, including a senior postdoc as a daily supervisor, a PhD student working on a parallel project and a technician expert in sevaral techniques used in our lab. Our lab uses multidisciplinary approach combining high-thoughput genomics, quantitative imaging and high-thoughput proteomics. We use 2-D normal as well as human cancer cell lines and mouse 3-D tumor organoids for our studies. We frequently use CRISPR/Cas9 genome editing, Next generation sequencing analysis of chromatin via ChIP-Seq, 3-D chromatin organization via Hi-C, super-resolution imaging using SIM/STORM microscopes, single cell-based quantitative (QIBC) imaging and quantitative proteomics.  A picture containing wall, person, clothing, person  Description automatically generatedA group of people standing in front of a building  Description automatically generated      PI:Nitika Taneja at ErasmusMC  Board of examiners, B.Sc/M.Sc Nanobiology program  Teacher at Erasmus MC & TU-Delft  **Our group (pre-Covid picture)** |
| ***Requirements of candidate:*** | * We are looking for a highly motivated, hardworking student with master’s degree to join our very international team. Our strength is in using team work to tackle large scientific questions and thus requires a student with good communication skills. English requirements: *English speaking countries & Netherlands:* no requirement * *Other countries:* IELTS 7.0 *(min 6.0 for all subs)*, TOEFL 100 *(min 20 for all subs)* * We offer: Supervision, lab facilities and infrastructure, and training. We will cover Laboratory costs. As a candidate PhD student at Erasmus MC, your salary and living expenses will be covered by your university or Scholarship Council. For more information regarding this vacancy, please contact n.taneja@erasmusmc.nl. |

**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!