



CeNT-7-2021

***Director of Centre of New Technologies of the University of Warsaw, with the Project Leader, announce opening of the competition for the position of PhD Student in the Laboratory of Stem Cells, Development and Tissue Regeneration - Centre of New Technologies of the University of Warsaw.***

## JOB OFFER

Position in the project:	PhD Student
Laboratory:	Laboratory of Stem Cells, Development and Tissue Regeneration
Scientific discipline:	Life sciences (Molecular and Cell Biology of Stem Cells)
Keywords:	Skin stem cells, skin progenitor cells, BMP signaling, WNT signaling, different aspects of skin regeneration,
Job type (employment contract/stipend):	PhD Student fellowship/ civil law agreement
Part-time/full-time:	Full-time
Number of job offers:	3
Remuneration/stipend amount/month	5000 PLN gross gross max
Position starts on:	01.04.2021 or as soon as possible afterwards
Maximum period of contract/stipend agreement:	6 months (with the possibility of extension up to 24 months)
Institution:	Centre of New Technologies, University of Warsaw
Project leader:	Krzysztof Kobiela, MD, PhD, Associate Professor
Project title:	Role of bifunctional nail proximal fold stem cells in digit regeneration.
Competition type;	OPUS-17
Financing institution:	NCN
Project description:	Adult stem cells are fundamental for proper organ maintenance and tissue regeneration. The tips of mammalian digits including human can regenerate after amputation, like those of amphibians but it was unknown why this capacity is limited to the area associated with the nail. Recently, cells in the nail matrix, which contribute towards nail differentiation and visible nail formation, received notable attention for their ability to coordinate mammalian digit regeneration. Indeed, highly proliferating nail stem cells have been proposed to be localized within the nail matrix and are necessary for mammalian digit regeneration mechanisms. In addition, at the same time, my laboratory has identified a novel dormant stem cells population which exists in continuously growing nails. Interestingly, these previously unreported slow dividing stem cells population of the nail is organized in a ring-like configuration



	<p>within the proximal fold, area where skin epidermis bends inward ventrally and become nail epidermis which localizes on the border between epidermis and nail at the fingertips. Thus, we have identified a novel population of stem cells with dual function within the nail proximal fold region which displays plastic homeostatic dynamics capable of responding to injury and suggest a common, coordinated mechanism of protective barrier formation which could occur between the nail and adjacent epidermis. Here, we hypothesize that these stem cells are a crucial source of cells during nail homeostasis and are necessary to respond after an injury to regenerate the nail and subsequently digit in mammals. In this proposal, we will employ several different approaches to test and validate our hypothesis. We assume, that further characterization of nail proximal fold stem cells may help fill the gaps in our current understanding of nail biology and could not only offer novel forms of treatment for patients with nail and digit defects but could revolutionize in a broader sense, and also provide new regenerative therapies for amputees in the future.</p>
<p>Key responsibilities include:</p>	<p>Candidate, who has experience in working with mouse models and epithelial stem cells, will be responsible for carrying the overall project, including isolation of cells by FACS, RNA isolations, immunofluorescent staining and molecular tests. He/She will analyze the skin tissue and digits and isolate stem cells by FACS for culture and further analysis.</p>
<p>Profile of candidates/requirements:</p>	<ul style="list-style-type: none"><li>• Master in Biology, Biotechnology or M.D. in Medicine (with completed master's degree)</li><li>• Status of PhD Student</li><li>• Good knowledge of English,</li><li>• Experience in work with laboratory animals (mouse breeding/numbering/genotyping, some basic mouse surgeries, microscope techniques, PolLASA training or equivalent),</li><li>• Experience in laboratory work: gel electrophoresis, PCR, RT-PCR, q-PCR, DNA/RNA/Protein extraction and purification, DNA cloning, lentiviruses, western blot, cryo- and paraffin- sectioning, immunofluorescent and immunohistochemistry staining, microscopy: fluorescent and confocal laser scanning microscopy, mammalian cell culture,</li><li>• Knowledge of Adobe Photoshop, Adobe Illustrator, PowerPoint</li><li>• Team work skills</li></ul>
<p>Required documents:</p>	<ol style="list-style-type: none"><li>1. Cover letter describing Candidate's motivation</li><li>2. Current curriculum vitae (CV)</li><li>3. Master's degree certificate</li><li>4. Document confirming the status of PhD Student (to be provided prior to starting work in the project)</li><li>5. Letter of recommendation from a scientist who is familiar with the Candidate (submitted directly to email address below)</li><li>6. Information on scientific presentation, conferences, publications, scholarships, prizes and awards, or other relevant documents demonstrating the excellence of Candidate</li><li>7. Information on the processing of personal data - the form is available at CeNT UW webpage: <a href="https://cent.uw.edu.pl/en/wp-">https://cent.uw.edu.pl/en/wp-</a></li></ol>



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We offer:	We offer an interesting work in a young, dynamically developing team, Access to state-of-the-art equipment and data Opportunities for interdisciplinary and international collaborations Opportunities and support to grow
Please submit the following documents to:	<a href="mailto:k.kobielak@cent.uw.edu.pl">k.kobielak@cent.uw.edu.pl</a> with the title "PhD Student Application OPUS"
Application deadline:	15.03.2021
Date of announcing the results:	22.03.2021
Method of notification about the results:	e-mail