

Three post-doctoral positions in a research consortium exploring novel glioblastoma therapies

Three post-doctoral positions are available in the research groups of Professor Jukka Westermarck (University of Turku, Turku, Finland), Docent Pirjo Laakkonen (University of Helsinki, Finland) and Docent Jessica Rosenholm (Åbo Akademi, Turku, Finland) to develop novel therapies for treatment of glioblastoma, a malignant human brain cancer. The goal of the project is to develop and validate a novel glioma therapy strategy using nanoparticle-mediated delivery of therapeutic RNAi through the blood-brain-barrier. The project is funded by the Jane and Aatos Erkkö Foundation for 3 years.

Each research group hires one post-doctoral researcher having prior experience on the specific field of the research group in question. The group of Professor Westermarck has focused on RNAi cancer therapy and small molecule kinase inhibitors (<http://www.btk.fi/research/research-groups/westermarck/>), the group of docent Laakkonen has developed unique peptides to permeate blood-brain-barrier (<http://research.med.helsinki.fi/cancerbio/laakkonen/index.html>; <http://www.helsinki.fi/recruitment/index.html?id=92228>), and the group of Docent Rosenholm has developed novel nanoparticles to deliver therapeutics and siRNAs into cells (www.fyke.fi/bionano). More detailed descriptions of each open position can be found by following the links above.

Positions are available for up to three years starting late 2014. Successful applicants are expected to have a PhD degree in any of the life sciences or an MD/PhD/DSc(Tech) degree, as well as a published track record of successful scientific work.

WITHIN THE BIONANOMATERIALS GROUP:

Post-doctoral position in siRNA/drug delivery for cancer therapy

A post-doctoral position is available in the group of Docent Jessica Rosenholm at the Laboratory for Physical Chemistry, Åbo Akademi University, Turku, Finland. The position is open in a research consortium focusing on development of new therapies for treatment of human brain cancer, glioblastoma. The goal of the project is to develop and validate a novel glioma therapy strategy using nanoparticle-mediated delivery of therapeutic RNAi and small-molecular drugs through the blood-brain-barrier. The project has obtained a 3-year funding from Jane and Aatos Erkkö Foundation.

The research group of Docent Rosenholm (www.fyke.fi/bionano) has focused on the development of mesoporous silica-based nanocarriers for the delivery of siRNA ([J. Zhang et al. Dalton Trans., 2014, 43, 4115.](#)) These carrier systems are currently being evaluated for their therapeutic effect *in vitro* utilizing different siRNA cargoes. As a next step, these carrier systems should be formulated for combination therapies using RNAi and oncogenic kinase inhibitors in gliomas, in line with Prof. Westermarck's groups recent discoveries related to a highly potential combination therapy approach that kills even the most therapy resistant glioblastoma cells. Thus, further carrier design with respect to the feasibility of carrying and



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releasing the kinase inhibitor cargo and possibly also dual-loaded siRNA and drug will be conducted. Our aim is to develop a novel therapy strategy for glioblastoma by using new efficient combination therapy concepts and glioblastoma mouse models developed by the two other groups in the consortium. Ultimately, the integration of BBB-permeability function may also be another aspect to consider in the carrier design. Mesoporous silica nanoparticle synthesis, surface functionalization, drug/siRNA loading and release studies and further optimization of the carrier design will thus be central tasks within this project. Therefore successful applicants should be well-acquainted with materials sciences, physical chemistry and/or nanotechnology and applications of nanomaterials within biomedicine and/or pharmaceutical technology. Experience in specifically gene delivery as well as acquaintance with common techniques in materials characterization, biophysics, pharmaceutical sciences and/or cell biology is also a valuable asset. In addition good skills in English and in team-working are highly valued. We are searching for highly a motivated person with a publication record indicative of competence in independent scientific thinking and project management.

Salary will be based on the Universities salary scheme for teaching and research personnel. The task specific salary component is at level 5, and the component based on personal work performance (max. 46%) is added to the task specific salary. There is a trial period of four months in the position.

Applications are to be submitted by e-mail to [jessica.rosenholm\(at\)abo.fi](mailto:jessica.rosenholm@abo.fi) no later than the 5th of October 2014 at 24:00 (midnight). The application should include CV, list of publications and a letter of motivation (1 page) clearly describing your previous achievements in the field. Also include names and contact information of three references. Please, name the subject field of your e-mail as "Post-doc application/Erkko".