

Title of the advert

Post-Doctoral Position at the University of Lausanne, Switzerland, to work on the mechanisms underlying the anti-melanoma activity of photo-dynamic therapy.

Description

We are seeking to recruit a highly motivated Post-Doctoral Fellow to investigate the molecular mechanisms that mediate the anti-melanoma activity of photo-dynamic therapy. This project involves South African and Swiss laboratories. Melanoma accounts for 4% of all dermatologic cancers but remains responsible for 80% of deaths from skin cancer with the average patient diagnosed with disseminated metastases surviving for an average of 5 years. South Africa, next to Australia, has one of the highest incidences of malignant melanoma in the world. In Switzerland, the incidence of melanoma has risen sharply. In this country, this cancer is one of the most common among young adults. Despite extensive research and clinical trials, the prognosis and survival of metastatic melanoma remains dismal. Therefore, there is an urgent need for the development of

novel and more effective approaches to treat melanoma. Photodynamic therapy (PDT) is a minimally invasive therapeutic modality which has been shown to be effective in several types of cancer. The basis of PDT is the systemic or topical application and preferential uptake of a photosensitizer (PS). The PS is then activated at a specific wavelength of light and, in the presence of oxygen, produces reactive oxygen species that eventually induce cell death via apoptotic or necrotic mechanisms. However, precise understanding at the molecular level of the anti-cancer activity of PDT is lacking. A better knowledge of the signaling pathways activated by PDT is highly desirable as this would give the scientific basis for further refinement and improvement of this anti-cancer approach.

The Cape Town laboratory has been successful in increasing melanoma cell death through the use of photodynamic therapy with a second generation photosensitizer derived from the plant *Hypericum perforatum* called hypericin. In collaboration with the Lausanne laboratory, the molecular mechanisms responsible for this anti-cancer activity will be deciphered using state-of-the-art screening strategies (e.g. genome-scale CRISPR-Cas9 knockout screening).

The successful applicant will have a PhD in cell biology, biochemistry or a related biological discipline. Experience in the apoptosis and cell signaling fields, as well as a demonstrated ability to generate publications, would be desirable. Applicants must have experience in cloning techniques, cell culture, generation and use of lentivirus. Other required qualifications include creativity, the capacity to maintain excellent documentation of their work, to collaborate proficiently, and to communicate effectively with colleagues. South African candidates are particularly encouraged to apply. This position opens September 2015 for a 16 month period with the possibility of extensions.

Applications containing a CV, a motivation letter, a brief statement (one paragraph) of your research experience and interests as well as contact information of 2-3 references should be sent to Pr. Christian Widmann (Christian.Widmann@unil.ch).

