



**ICGEB Cape Town  
and University of Cape Town, Department of Medical Biochemistry**

**POSTDOCTORAL POSITION  
in the laboratory of Prof. M. Iqbal Parker**

**Project title: *The identification of novel receptors involved in recognition of HPV.***

Infection with human papillomaviruses is closely associated with certain human cancers. Inhibition of the early events of HPV infection such as cellular receptor binding and entry could provide potential targets of inhibiting the spread of an HPV infection. However, it is still unknown which receptor is used by HPV to infect target cells. Currently it is proposed that the initial steps of HPV infection occur via interaction of the major capsid protein L1 with cell surface heparan sulfate proteoglycans. These proteins are considered as attachment receptors as HPV binding eventually leads to its transfer to a still unknown specific uptake receptor on keratinocytes (1, 2).

The proposed project will focus on the identification of the HPV-specific entry receptor(s) using a functional screening method, relying on the ability of retroviral vectors to generate stable cell populations expressing cDNA libraries, which can then be screened for surface receptors (3). We have successfully used this method in the past to identify Scavenger Receptor B1 (SR-B1) as a macrophage receptor for *Mycobacterium tuberculosis* (4). In this project we will generate a cDNA expression library from human keratinocytes which will then be expressed in pgsD-677 cells that are defective in proteoglycan synthesis. The cells will be screened for HPV uptake using GFP-expressing HPV virus-like particles. Once an HPV entry receptor has been identified, future studies will involve extensive molecular and functional characterisation of this molecule, and its relevance to infection.

**References:**

1. C. A. Horvath, G. A. Boulet, V. M. Renoux, P. O. Delvenne, J. P. Bogers, *Virology* **7**, 11.
2. J. T. Schiller, P. M. Day, R. C. Kines, *Gynecol Oncol* **118**, S12 (Jun).
3. A. C. Zannettino, J. R. Rayner, L. K. Ashman, T. J. Gonda, P. J. Simmons, *J Immunol* **156**, 611 (Jan 15, 1996).
4. G. Schafer, R. Guler, G. Murray, F. Brombacher, G. D. Brown, *PLoS One* **4**, e8448 (2009).

To make a formal application, please send a full curriculum vitae and a covering letter motivating your application (including the names, telephone/fax numbers and e-mail/postal details of three contactable referees) to Prof. M. Iqbal Parker (iqbal.parker@icgeb.org) or Dr. Georgia Schäfer (georgia.schafer@uct.ac.za).

Requirements: A PhD in the Biomedical Sciences and experience in molecular cloning techniques, cell culture, fluorescent microscopy.

This position offers a salary of R150,000 per annum and is for one year, renewable. It is available immediately.

Application Deadline: 31 January 2012