

CATHERINE CLARK

EDUCATION AND QUALIFICATIONS

1989 - 1993: PhD

Department of Biochemistry, University of Glasgow, Glasgow, United Kingdom / Medical Research Council Blood Pressure Unit, Western Infirmary, Glasgow, United Kingdom

Thesis title: “**Vascular guanine nucleotide regulatory proteins in genetic hypertension: levels and function in two rat models**”

1985 - 1989: BSc (Hons) Upper Second Class (Biochemistry)

Faculty of Science, University of Glasgow, Glasgow, United Kingdom

During the summer vacations of 1988 and 1989, I was employed by Ciba-Geigy Ltd., Basel, Switzerland and the Leukaemia Research Fund Virus Centre, University of Glasgow Veterinary School, Glasgow, United Kingdom, respectively.

RESEARCH EXPERIENCE

February 2005 - May 2006: Research Fellow, Division of Infection & Immunity, Institute of Biomedical & Life Sciences, University of Glasgow, Glasgow, United Kingdom

Project title: “**The immune response to and function of expression products of the genes *cir* and *clag* in the rodent malaria parasite *Plasmodium chabaudi*”**

Funded by The Wellcome Trust.

July 2004 - December 2004: Research Fellow, Division of Neuroscience & Biomedical Systems, Institute of Biomedical & Life Sciences, University of Glasgow, Glasgow, United Kingdom

Project title: “**Role of neuronal mitogen- and stress-activated kinase 1 versus ribosomal S6 kinase 2 in plasticity and toxicity responses to stimuli involving p42/44 mitogen-activated protein kinase activation**”

Funded by the Centre of Excellence for Drug Discovery, GlaxoSmithKline.

July 2000 - June 2004: Research Fellow, Division of Neuroscience & Biomedical Systems, Institute of Biomedical & Life Sciences, University of Glasgow, Glasgow, United Kingdom

Project title: “**Role of kynurenines in cerebral malaria**”

Funded by The Wellcome Trust. Due to the success of a Commemorative Award for Innovative Research, a Showcase Award was secured.

April 1996 - April 2000: Senior Post-Doctoral Researcher, Department of Medicine & Therapeutics, University of Glasgow, Western Infirmary, Glasgow, United Kingdom

Project title: “**Progression of primary renal disease: a candidate gene approach**”

Funded by the National Kidney Research Fund. In addition, I co-ordinated two similar projects for Novartis.

November 1993 - March 1996: Post-Doctoral Researcher, Department of Obstetrics & Gynaecology, University of Glasgow, Royal Infirmary, Glasgow, United Kingdom

Project title: “**Vascular damage in pre-eclampsia: the mechanism of neutrophil activation**”

Funded by the Scottish Hospital Endowment Research Trust.

September 1989 - September 1993: Post-Graduate Researcher, Department of Biochemistry, University of Glasgow, Glasgow, United Kingdom / Medical Research Council Blood Pressure Unit, Western Infirmary, Glasgow, United Kingdom

Project title: “**Guanine nucleotide binding proteins and membrane function in hypertension**”

Funded by the British Heart Foundation. I registered part-time for the degree of PhD, which I was awarded unconditionally in November 1993.

LABORATORY TECHNIQUES

From 1989 - 2006, I held research posts in six academic laboratories (three of these laboratories were based in large teaching hospitals). From these posts, I gained experience of a wide range of laboratory techniques utilised in biomedical research, as detailed below.

Biochemistry

- Preparation of plasma membranes from tissues and cultured cells
- Measurement of protein concentration
- Adenylyl cyclase activity assay
- Receptor number and affinity measurements
- SDS-PAGE and immunoblotting
- Immunohistochemistry and immunocytochemistry (fluorescent and enzyme labelling)
- Enzyme linked-immuno-sorbent assay (ELISA)
- Measurement of lipid peroxidation by a colourimetric assay

Cell Biology

- Primary cell culture expertise, including isolation of vascular smooth muscle cells from rat mesenteric arteries, endothelial cells from human umbilical veins, and neurones from rat cerebral cortices
- Isolation of neutrophils, platelets, plasma, and serum from human blood
- Measurement of the adhesion of fluorescent-labelled neutrophils to endothelial cell monolayers
- Measurement of platelet aggregation by a turbidimetric method
- Analysis of the locomotory behaviour of cells *in vitro* using an automated tracking system

Molecular Biology

- Extraction of genomic DNA from human blood
- High throughput DNA amplification by PCR with genetic analyses by restriction endonuclease digestion
- Short interfering RNA (siRNA) gene knockdown