BBSRC CASE PhD Studentship in Neuroscience and Behaviour

Studentship number :	**BBSRC – 11/07**
Primary supervisor:	**Dr Andrew Young** **Email: amjy1@le.ac.uk** **School of Psychology**
Co-supervisors **(to be confirmed)**	**Dr. Blair Grubb** **Department of Cell Physiology and Pharmacology** **Industrial Partner**
Project title:	**Pharmacokinetic/pharmacodynamic assessment of potential antipsychotic drugs**

Project description

Understanding the pharmacokinetics (PK) and pharmacodynamics (PD) of drugs is critical to the design of novel drugs. We have characterised a method, using MetaQuant (MQ) microdialysis to measure absolute concentrations of drugs and brain chemicals (e.g. neurotransmitters and metabolites) *in vivo*, and to differentiate between free (active) and bound (inactive) compartments of the drug, critical for PK/PD analysis. Experiments will use MQ microdialysis to measure brain concentrations of applied drugs, and subsequent neurotransmitter release, and associated behavioural changes, enabling us to construct PKPD profiles for the drugs. This will inform *in silico* models for predicting drug action. The studies will concentrate on drugs with antipsychotic potency, and will focus on actions of dopamine and serotonin. This project is funded by the BBSRC, possibly in partnership with a major UK Pharmaceutical company (to be confirmed), and will provide the student with an excellent grounding in state-of-the-art neurochemical monitoring and computer modelling techniques. Hard-working, independent-minded and enthusiastic students who can work well in a team are encouraged to apply.

Selected references

Sood P, Cole S, Fraier D & Young AMJ (2009) Evaluation of Metaquant microdialysis for measurement of absolute concentrations of amphetamine and dopamine in brain: a viable method for assessing pharmacokinetic profile of drugs in the brain. J, Neurosci Meth. 185, 39-44.