

In vivo training initiative report
Ms Natasha Moses & Dr Nisha Singh

Ms Natasha Moses: The In Vivo Training Initiative by The British Association of Psychopharmacology (BAP), provided the opportunity for me to gain an understanding of, and skills in, in vivo research in the field of psychopharmacology. I have a background in psychology and this was my first time carrying out in vivo research. I looked forward to participating in a project that would challenge me and strengthen my research skills.

The aim of the project was to investigate whether ebselen, a potential lithium mimetic, decreased synaptic glutamate release in rodents using positron emission tomography (PET). Ebselen was administered acutely and chronically to anaesthetised rats and [¹⁸F]FPEB, a radioactive tracer that binds to metabotropic glutamate receptor 5 on post-synaptic neurons was injected. PET imaging was used to quantify the uptake of [¹⁸F]FPEB, in specific brain regions. We found that acutely, certain brain regions showed an increase in [¹⁸F]FPEB binding, corresponding to a decrease in glutamate release. Additionally, tritium binding assays were also used to confirm that the results we obtained were not confounded by ebselen directly binding to the glutamatergic receptor.

As a result of this opportunity provided by the in vivo training initiative, I have gained a stronger understanding of in vivo imaging and psychopharmacology. I undertook the home office training course and was granted a personal licence. I also had the opportunity to attend a PET workshop hosted by Kings College where I gained an understanding of PET imaging. Finally, I have enhanced my analytical skills of reviewing literature and writing a scientific report.

I enjoyed my time researching this project and I'm thankful to my supervisor Dr Nisha Singh for her guidance as well as the BAP for providing the funding.

Dr Nisha Singh: I was awarded funding from the BAP as part of the In Vivo Training Initiative to train a student, without any prior knowledge of in vivo research, to undertake research involving rodents.

Natasha had never carried out any research involving animals when I interviewed her but was very keen and had researched the project thoroughly when we met. One of the first tasks for her was to take the Home Office Licensee training modules in order to apply for a personal license. She successfully completed the training and was also involved in undertaking training on radiation work and imaging techniques in rodents.

As we progressed with the research, Natasha became more confident with rodent handling, understanding the basics of anaesthesia (including recovery anaesthesia), in vivo administration of tracers and drugs, as well as PET imaging in rodents.

Without funding provided by the BAP as part of the In Vivo Training Initiative, I would not have been able to provide a project and supervise a student in a complex project such as this one, involving preclinical in vivo PET imaging.