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## **INVESTIGATING THE ANTI-INFLAMMATORY EFFECTS OF A NOVEL NOOTROPIC IN GLIAL CELLS EXPOSED TO ANTI-RETROVIRAL THERAPY**

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Neuroinflammation is a process that can be observed not only in neurodegenerative diseases but also as a result of infection alterations in the brain. The infection agent, or the drugs used to treat the pathology, can lead to neuroinflammation. The neuroinflammatory effects of different drugs used to treat HIV have not been investigated yet. The aim of this project is to test the inflammatory effects of anti retroviral drugs used to treat HIV patients in brain cell cultures. Once the cause of the inflammation is known, the decision on which drug to use, for each particular case, will be easier to make. In the case of patients with neuroinflammation, some anti-retroviral drugs – expected to be less inflammatory – can be used. Furthermore, a nootropic drug was tested. This could play an important role in helping to cope with the inflammation. To test the inflammatory effects of the drugs, we used microglia and astrocyte in vitro models. Glial cells and astrocytes can secrete or respond with a variety of cytokines. IL-1 $\beta$ , IL-6 and TNF- $\alpha$ , are cytokines used as markers for inflammation. In this study, the ability of mixed glial cells and astrocytes to secrete IL-1 $\beta$ , IL-6 and TNF- $\alpha$  in response to three anti-retroviral drugs (maraviroc, efavirenz and rilpivirine) has been examined. Loss of memory is one of the consequences in later stages in HIV. Sunifiram, a novel nootropic drug, is believed to help with inflammation and to improve cognition. The pro inflammatory or anti-inflammatory effect of Sunifiram on astrocyte cultures, combined with the anti-inflammatory drug treatments, was tested.

## **BIOGRAPHY**

Helena Isla Magrane is a Biotechnologist who performed a master research bioscience in Brighton University (UK). Focused her master thesis on neuroscience area. Gained a lot of experience on research, investigated the anti-inflammatory effects of a novel nootropic drug in glial cells exposed to anti-retroviral therapy, carried out the project in collaboration with Imperial College of London. potential problem solver and very passionate on her work as she love science.

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