TCS/18/13 - The role of serum derived-extracellular vesicles in development and treatment of stroke and vascular cognitive impairment

Stroke is the 3rd leading cause of death and The leading cause of disability in the UK. Stroke risk increases with age and as we are living longer the number of people living with the consequences of stroke increases. One of the most feared consequences of stroke is memory problems. Our research group looks for new stroke treatments. Extracellular vesicles (EVs) are tiny particles that transport messages around the body. EVs have roles in both health and disease. We have found that EVs in blood from people with stroke differ from those in people without stroke. The main difference is in the types of microRNA (miRNA) they carry. MiRNAs are small pieces of a person's genetic make-up which control the expression of other substances. In this study we will explore how these miRNAs differ in people with stroke. We will particularly focus on those with stroke related memory problems. We will then test whether adding 'healthy' miRNA to EVs can aid recovery in experimental stroke models. If we show that miRNA can lessen the damage from stroke, both physical function but also memory and thinking, there may be scope to develop new treatments.