ANIMAL STROKE MODEL

Case Number: 15-105

APPLICATIONS

- Pre-clinical screening of candidate drugs against brain injury after stroke
- Use to investigate mechanisms of ischemia and/or reperfusion, together or separately

BACKGROUND

A stroke is the rapidly developing loss of brain function(s) due to disturbance in the blood supply to the brain. This can occur due to a haemorrhage or due to ischemia (lack of oxygen and/or glucose supply).

During ischemic stroke, blood flow to an area of the brain is blocked causing that area to cease function and ultimately die. The return of blood flow to the ischemic area, known as reperfusion, may occur either spontaneously or as a result of a clot-busting drug, such as tPA. Reperfusion is essential for the recovery of brain function. However, in a detrimental and paradoxical response, the return of blood flow can increase cerebral edema (fluid accumulation) and cause further brain damage.

Some animal models that have been developed for studying stroke have limitations such as high mortality rate during the experimental procedure and a lack of reproducibility. However, this new rodent animal model of stroke overcomes these challenges.

TECHNOLOGY

A novel rodent animal model to study the impacts of ischemic stroke. Blood flow in the brain can be blocked and then unblocked, which mimics the effect of a stroke. This model has an intra-operative mortality rate of less than 1%. This animal model has been validated and is highly reproducible, consistently resulting in a focal ischemia area restricted to the prefrontal cortex.

ADVANTAGES

- Validated animal model to study brain injury after stroke. Low mortality rate with a highly reproducible focal lesion.

STAGE OF DEVELOPMENT

Validated animal model

PATENT PROTECTION

Patent applications have been filed in Canada and the US (CA 2,789,785 and US 13/579,487).

OPPORTUNITY

Licensing

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