

## **Lay Summary**

**BRAIN UK Ref: 23/012**

### **Expression of THIK1 in temporal cortex from normal donors and those with Temporal Lobe Epilepsy (TLE)**

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We are applying for human tissue samples from BRAIN UK because we are interested in studying the expression of a drug target called THIK-1 in the brains of donors who had temporal lobe epilepsy (TLE). We have generated convincing evidence that THIK-1 is only expressed by microglia, immune cells in the brain. It has been suggested in the literature that microglia exacerbate TLE and we think that by dampening down their activity, we may be able to reduce the overall impact on patients. An important piece of evidence in this project is to see if the expression of THIK-1 in microglia is different between normal donors and those with TLE. We aim to do this using antibodies and RNA probes to THIK-1, which will label them in tissue sections and allow us to study them using microscopy: we need to study a group of normal donors and a group with TLE to identify if the levels of THIK-1 change. We have already developed a drug which is effective in inhibiting THIK-1 and reducing some of the activities of microglia and we think that there is potential for the therapeutic use of this drug.