

## **Lay Summary**

**BRAIN UK Ref: 22/020**

### **Targeting the serine synthesis pathway in central nervous system lymphoma**

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Lymphoma affecting the brain is a devastating form of blood cancer, particularly in patients where the disease has come back after treatment. Patients survive only a few months, and therefore we need to identify new treatments for this disease. Current therapies work by disrupting the metabolism of cancer cells.

We have been working on understanding the role that the serine synthesis pathway plays in helping lymphoma cells to grow. This pathway allows cancer cells to use sugar to make serine, which in turn can be used to make the building blocks for proteins and DNA. Our research has shown that lymphoma cells need the serine synthesis pathway to allow them to grow and survive. If we block this pathway the cells cannot make DNA, which means that the tumours cannot grow. We think that blocking this pathway will be a particularly effective treatment for lymphoma affecting the brain, as we believe that this pathway is crucial for allowing lymphoma cells to survive in brain tissues. As the role of serine synthesis pathway is closely linked to how cancer cells use folic acid, we believe that new drugs blocking this pathway will also help existing treatments work significantly better, helping more patients to be cured of brain lymphoma.