

## **Lay Summary**

**BRAIN UK Ref: 14/012**

### **Identifying and characterising treatment-resistant subclones in glioblastoma multiforme**

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Glioblastoma multiforme (GBM) is the deadliest adult brain cancer, killing almost half of all sufferers within just one year. GBM is thought to be incurable because the tumours are made up of a mixture of cells with different genetic alterations and characteristics that help them survive treatment with radiotherapy and chemotherapy.

My research tests the theory that GBM tumour regrowth (recurrence) results from expansion of groups of treatment-resistant cells present in the original tumour. I plan to test this by using high-throughput sequencing technologies to inspect the different types of cells present in matched original GBM tumours and recurrences following treatment. This will enable me to identify the cells that resisted treatment and then to characterise them, down to the single-cell level, in more detail than ever before.

Identifying and characterising treatment resistant GBM cells will enable us to develop more effective therapies that specifically kill, or inhibit, them.