Glioblastoma (GB) is among the top priorities in today’s clinical oncology (Tab. 1). Based on the “one-treatment-for-all” principle, the current standard of care for newly diagnosed GB is marginally effective (Fig. 1). The inevitable tumour recurrence poses a major clinical challenge and substantial socio-economic burden on public health institutions. For recurrent GB (recGB), no effective therapeutic options currently exist. Recent advances in genomics in conjunction with a paradigm shift in the understanding of GB biology have revealed the therapeutic promise of a personalized genomic approach to GB.

OMICSGLIOMA is an interdisciplinary consortium aiming at developing an integrative framework for personalized diagnostics and treatment of recGB (Fig. 2). The consortium combines know-how and expertise in cutting edge genomics (StarSEQ GmbH), system biology (BRMC, Russia), clinical neuro-oncology and experimental glioma stem cell research (University Medical Centre Mainz).

**Objective**

Glioma stem cells drive GB recurrence under standard therapy

![Figure 1](image1.png)

Inevitable post-treatment recurrence

Limited access to latest therapy

**OMICSGLIOMA Goals**

Identification of therapeutically actionable lesions in recGB

Innovative features

Development of an integrative web-based model for personalized oncbservice

**GB Factsheets**

Tab. 1 GB- general information

| incidence | 8.3 per 100.000 |
| new cases | 7.000 per annum (Germany) 250.000 per annum (worldwide) |
| clinical data | mean survival: < 15 months 5 years survival rate: < 10% post-therapy recurrence: 100% |
| standard of care | surgery + radio-chemotherapy (TMZ) |
| treatment costs | ~ 70.000 € (before TMZ) 150.000 € (after TMZ) 250.000 € (by 2020) |

**Figure 2**

Clinical & experimental neuro-oncology

Drug prediction

Molecular drifts

Identified tumor actionable lesions in recGB

Parallel profiling of patient-matched tumour tissue and glioma stem cells

Patient-matched longitudinal approach

Multi-sampling method

Neurosurgical service

Genomics service

Omics-based approach to personalized treatment of therapy-refractory malignant brain tumours

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