**GlioEX: Nanoengineered exosomes to treat glioma**

**Project coordinator:** Glatzel Markus, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

**Partner countries:** Germany, Sweden, Portugal

**Project description:**
Pharmacotherapy has proven to be inefficient in the treatment of primary brain tumors. Ineffective penetration of the blood-brain barrier and the unspecificity of tumor cell targeting are the key factors hindering the efficacy of pharmacotherapy. Glioex aims at discovering novel vesicle-based therapeutic approaches to enable improved blood-brain barrier penetration and tumor-cell specificity. To this end, nanomedical approaches will be employed to manipulate exosomes, the membrane vesicles secreted by cells. This approach is designed to facilitate targeted therapy, while reducing side effects and simplifying treatment.

**Diagram:**
- **P1:** Exosome preparation
- **P2:** Glioma-homing peptides
- **P3:** Exosome-specific glycosignatures
- **P4:** Integration of pharmaceuticals in exosomes
- **P5:** assess glioma-targeting, assess glioma-treatment

**Academia**
- **P1:** Target cell fusion capacity
- **P3:** Exosome-specific glycosignatures

**Clinical sector**
- **P2:** Exosomes with biotherapeutics
- **P4:** novel methods to bring pharmaceuticals in exosomes

**SME**
- **P5:** assess glioma-targeting, assess glioma-treatment
- **P4:** provides nano-engineered exosomes
- **P2:** provides novel fusogenic peptides
- **P1:** provides glioma-specific glycosignatures

**Partner countries:**
- Germany
- Sweden
- Portugal