

## **KNOW & KILL:**

### **Therapy Resistant Glioblastoma Stem Cells: Know and Kill**

**ADRESSED PATHOLOGY:** Glioblastoma multiforme, Anaplastic astrocytoma

#### **GENERAL OBJECTIVE:**

The project proposes to use bioluminescence imaging procedures in combination with immunohistochemical procedures to monitor simultaneously the behaviour of the tumor bulk and tumor progenitor cells or, alternatively, the behaviour of tumor cells and therapy delivering AMSCs during therapy to eliminate therapy resistant glioma stem cells (TR-GSCS). The objectives will be to further characterize TR-GSCs and to develop therapies that target them for destruction. The proposed therapy strategies use tumor homing human AMSCs modified to deliver either TNF-related apoptosis inducing ligand (TRAIL), or paramagnetic nanoparticles that can deliver tumor killing hyperthermia. Also siRNA loaded polymeric nanoparticles will be used to make TR-GSCS more vulnerable to standard chemotherapeutic agents.

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