Project Summary BBTS 2014 – Matthias Van Woensel

With an incidence of 5 per 100000 persons each year, glioblastoma multiforme (GBM) is the most common primary brain tumor. Multimodal treatment, consisting of surgery, chemo-, radio-, and experimental immune-therapy, are available and prolong survival, but fail to cure the patient. The tumor micro environment seems to be a crucial hurdle in making the next steps. GBM tumors can secrete molecules in this environment that favor their survival. In this context, galectin-1 is highly upregulated and is an important mediator in promoting tumor-cell migration, angiogenesis, resistance to chemo and immune-therapy. For these reasons, we aim in this project to suppress galectin-1 in the tumor micro environment. In a close collaboration between KUL and ULB, we have developed a specific formulation, targeting galectin-1, which can be administrated in the nasal cavity. Recently, a mounting body of evidence is accumulating that formulations can travel from the nasal cavity directly into the central nervous system, and into the tumor microenvironment. This non-invasive treatment modality increases patient comfort, and reduces systemic side effects. We are currently investigating in our validated glioblastoma mouse model if the nose-to-brain transport can be used to suppress galectin-1.