

BRAIN TUMOR RESEARCH PROJECTS

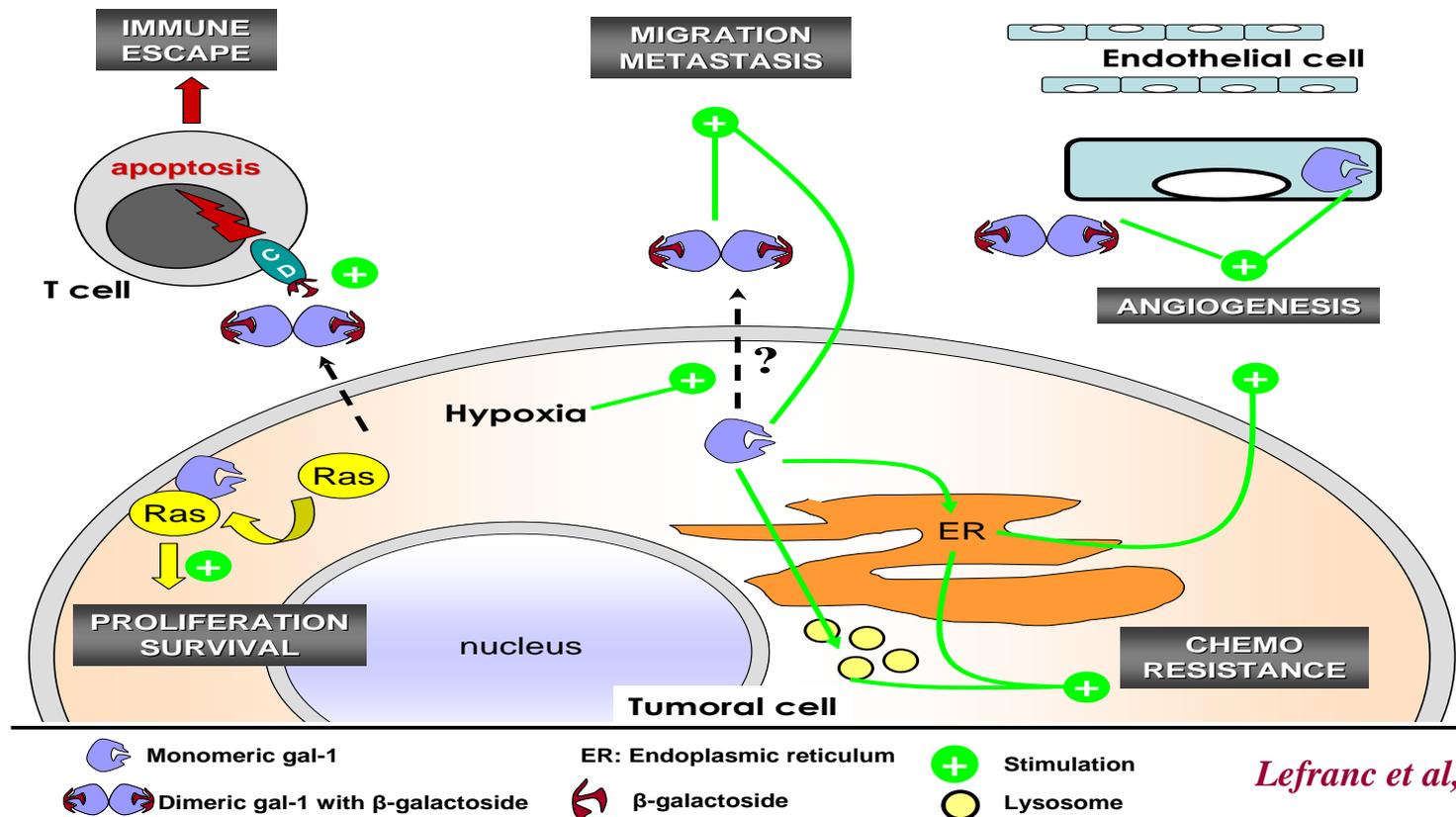


Laboratory of Toxicology, Pharmacy Faculty, ULB
Véronique Mathieu, MD, PhD



Anti-galectin-1 strategy

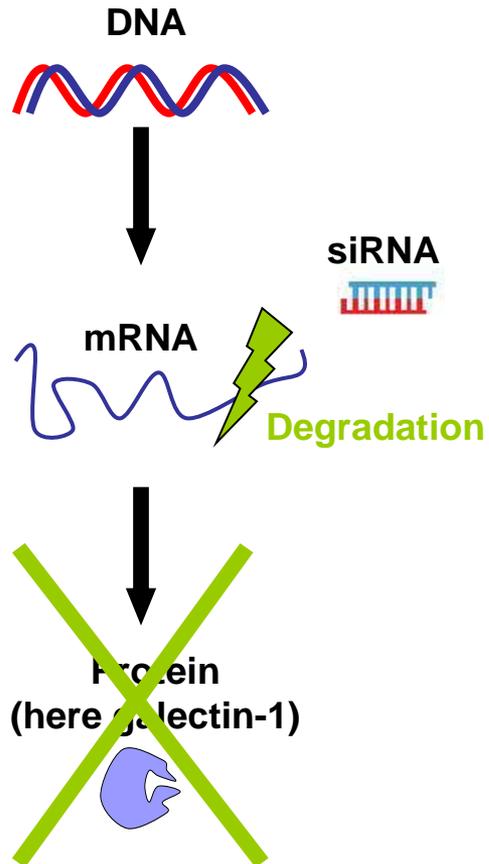
- Galectin-1 is a non vital protein that binds to beta-galactosides extracellularly and proteins intracellularly
- Galectin-1 is overexpressed by several cancer types including gliomas
- Galectin-1 favors tumor development:



Anti-galectin-1 strategy

- Our strategy: use of siRNA that regulates the gene expression:

Principle



➤ A patent has been taken

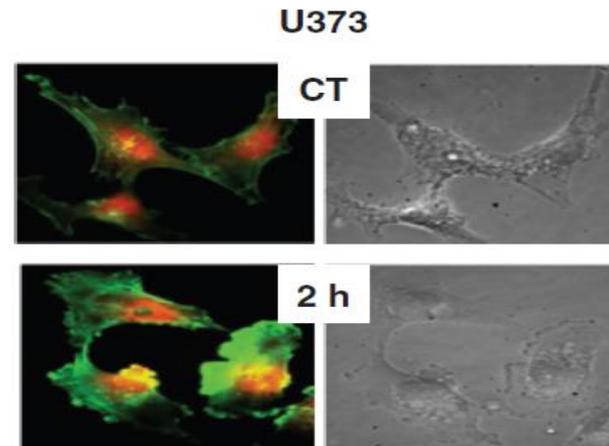
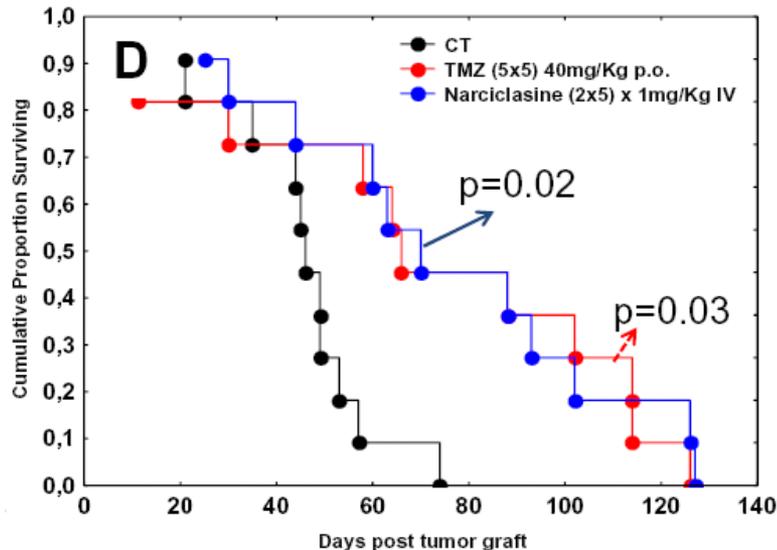
➤ The efficacy in the animal models showed that this approach can be used **in combination with chemotherapy** (temozolomide in particular).

➤ The roles of galectin-1 in immune escape make this anti-galectin-1 approach promising also **in combination with vaccinotherapy** (proof of concept and efficacy demonstration in collaboration with Pr De Vleeschouwer).

➤ **Ongoing**: siRNA are rapidly degraded in the human body. Formulation and targeting of the siRNA are required to improve the efficacy. (in collaboration with Pr De Vleeschouwer).

Narciclasine anti-cancer effects

- Narciclasine is 250X more active on cancer cells than on normal cells
- Narciclasine inhibits protein synthesis which is increased in cancer cells as compared to normal cells. These effects occur at least partly through EF1A inhibition.
- Narciclasine disorganizes the actin cytoskeleton (muscles) of cancer cells
- Narciclasine improves the survival of glioblastoma bearing mice depending on the administration schedule (to be optimized)



- ➔ Decreases migration
- ➔ Impairs cell division (cytokinesis)

People working on these projects

- In the laboratory of Toxicology, the following people are working at part or full time on these subject:

- Véronique Mathieu, MD, PhD, ad interim head of the lab
- Robert Kiss, PhD, Director of Research at the « Fonds National de la Recherche Scientifique »
- Marina Bury, PhD student (FRIA granted)
- Laetitia Moreno y Banuls (FNRS granted)
- Thierry Gras (technician)

- These projects are developed also thanks to national and international collaborators: **MANY THANKS TO THEM!!!**

- To see the list, please consult the web page of the laboratory