Consiglio Nazionale delle Ricerche

Istituto di Biologia Cellulare e Neurobiologia
Institute of Cell Biology and Neurobiology
CNR-IBCN

AVVISO DI SEMINARIO

SEMINAR ANNOUNCEMENT

Visualizing glioblastoma in vivo in the mouse brain

Dr. Gian Michele Ratto

CNR Institute of Nanoscience - Pisa

07 March 2018, 14:30 – 16:00

Monterotondo CNR Seminar Room, Building 21

Highlights: Synaptic transmission and tumour growth share common pathways and mechanisms which has led us to wonder whether the tools classically used to study neuronal plasticity might offer new insights on the understanding of tumor progression. Glioblastoma (GBM) is characterized by an aggressively invasive phenotype and in the initial phases of its development there are no conspicuous clinical signs. Therefore, the early detection of a primary tumor is virtually impossible to investigate in human samples where there is a small degree of genetic mosaicism where few tumor cells are still surrounded by normal tissue. We are developing murine models for the investigation of the early pathophysiology of GBM. We have engineered the murine glioblastoma cell line GL261 to stably express a green or red fluorescent protein. An optical window is applied on the transplant site to allow the longitudinal assessment of tumor progression by means of *in vivo* two-photon imaging. After 8-10 days from the transplant, the core of the tumor is very dense and is formed by spherical cells that completely replace the original tissue. At the periphery, cancer cells are very elongated and motile and display a large degree of structural plasticity and interact with elements of the original parenchyma, including collagen fibers that provides and important clue for the migration of cancer cells. Finally, I will discuss a novel reporter/effector of CRE-recombinase that we are using to create 'on demand' models of genetic mosaicism that we will use to investigate the early phases of GBM development and infiltration.

Host: Prof. Fabio Mammano