



Consiglio Nazionale
delle Ricerche
CNR

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

AVVISO DI SEMINARIO

SEMINAR ANNOUNCEMENT

The P2X7 receptor is a key determinant of tumor-host interaction

Prof Francesco Di Virgilio

Department of Morphology, Surgery and Experimental Medicine, University of Ferrara

Friday, 27 May 2016

14:30 – 15:30

Monterotondo CNR Seminar Room, Building 1

Highlights:

The tumor microenvironment is rich in nucleosides and nucleotides. Very recent observations have highlighted the crucial role of adenosine in causing the highly immunosuppressive properties of the tumor interstitium. Mounting evidence suggests that also extracellular ATP heavily affects anti-tumor immunity, albeit effects of this nucleotide on host-tumor interaction are still incompletely understood. Nevertheless, convergent data from several laboratories point to the P2X7 receptor as the main candidate mediating host-tumor interaction in the tumor microenvironment. This receptor is heavily expressed by tumor cells as well as by host immune cells, myeloid-derived suppressor cells included. Thus it is hypothesized that its stimulation/inhibition should heavily affect tumor progression. *In vivo* data support this hypothesis showing that P2X7 blockers have a strong anti-tumor effect. However, mice genetically deleted of the P2X7 receptor exhibit a surprising tumor-promoting phenotype. I will provide a coherent explanation of these apparently paradoxical findings and show novel observations that further support the key role of the P2X7 receptor in cancer. It is anticipated that an in depth knowledge of the pharmacology, biochemistry and functional activity of the P2X7 receptor will allow a better understanding of host-tumor interaction and the development of innovative anti-cancer therapy.

References:

- Di Virgilio and Adinolfi, 2016. *Oncogene*, submitted
- Di Virgilio et al., 2016. *Curr Opin Pharmacol* in press
- Adinolfi et al., 2015. *Cancer Res* 75:635-644
- Adinolfi et al., 2012 *Cancer Res* 72:5441-5447
- Pellegatti et al., 2008. *PLoS ONE* 3:e2599
- Pellegatti et al., 2005. *Mol Biol Cell* 16:3659-3665

Host: Prof Fabio Mammano