5th International Conference on
Oncology & Virology

July 25-26, 2019   Rome, Italy

Drosophila as a Model Organism in Cancer Research

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Essential mechanisms at the basis of cancer are conserved across metazoans. In the last decades, the cancer community has developed several cellular and animal models that have greatly helped elucidate fundamental processes at work during cancer initiation and progression. In particular, the fruit fly *Drosophila* has been contributing relevant literature to the field. The conservation in the fruit fly of the genes and signalling pathways implicated in mammalian tumorigenesis and the availability of sophisticated systems favouring tailored genetic manipulation have made *Drosophila* a prominent model in cancer research. Despite obvious differences in organ anatomy, *Drosophila* studies have unveiled an amazing functional conservation of the physiology at the basis of organ development and maintenance. In parallel, dysfunction of key genes found deregulated in human cancers has been shown to promote tumour formation in the fly, fostering the development of humanised models bearing specific genetic alterations. I will present an overview of the manifold applications of *Drosophila* in cancer research, dwelling on some key findings from our lab illustrating how a biological phenomenon associated with cancer growth in the fruit fly can be profitably investigated in human cancers.

Biography:

Daniela Grifoni is a geneticist and cell biologist who uses the fruit fly, *Drosophila*, to understand cancer, mainly focusing on the impact of MYC and cell competition on cancer initiation and progression. She obtained a PhD in Genetic Sciences at Ferrara University and a Specialty in Applied Genetics at University of Bologna. Daniela Grifoni is Adjunct Professor and Research Associate at the Department of Pharmacy and Biotechnology, University of Bologna, where she leads the CanceЯEvolutionLab (https://grifonilab.weebly.com).

Madridge J Cancer Stud Res. 2019
MJCSR: 2640-5180 an open access journal

Oncology & Virology-2019
July 25-26, 2019

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