



UNIVERSITÀ
DI TRENTO

Dipartimento di
Biologia Cellulare, Computazionale e Integrata - CIBIO

CIBIO
EXTERNAL
seminar

05 JUNE

at 2 p.m.

Room A206, Povo 1

STAT3 AND BEYOND, AT THE CROSS ROADS BETWEEN INFLAMMATION, CANCER AND CANCER STROMA

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STAT3 is a pro-oncogenic transcription factor that is activated downstream of a plethora of cytokines, growth factors and inflammatory signals and whose activity is crucial both for the pathogenesis of auto-immune diseases and in the process of tumor transformation and progression, where it affects the activity of both tumor and stroma cells.

We have demonstrated that **STAT3 activity is both necessary and sufficient for the development of auto-immune myocarditis in mice**, due to the **amplification of an IL6-STAT3** feed forward loop in the liver. Indeed, we were able to **cure myocarditis** treating systemically with a liver-specific siRNA against STAT3, raising several important questions related to the role of non-immune organs such as the liver in auto-immunity. Digging into the role of STAT3 in mediating the cross-talk between tumor and stroma, we demonstrated that **its activity is essential to endow Cancer Associated Fibroblasts (CAFs) with pro-tumoral activities**. We identified a STAT3-driven signature in BC CAFs, conserved in patients and correlating with prognosis, several genes of which encode for secreted factors responsible for the stroma-to-tumor cross-talk in breast cancer, which can be readily accessed by inhibitors to impair primary tumor growth and metastases.

Finally, by analyzing gene co-expression patterns in vast BC databases, we identified gene modules correlated with prognosis amenable to disruption via interference with their hubs as a therapeutic approach.

Contacts

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