



PRINCIPE FELIPE  
CENTRO DE INVESTIGACION

## CIPF Seminar

### Genetic Ablation and Targeted Antagonism miR-21 in Tumor Associated Macrophages Promotes an Antitumor Immune Response

Speaker: **Yajaira Suárez, PhD**

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Date: **26/07/19- 12:30h**

Place: Salón de Actos CIPF

miR-21 is the most commonly upregulated miRNA in solid tumors. This oncomiR regulates various downstream effectors associated tumor pathogenesis during all other stages of carcinogenesis. In this study we analyzed the function of miR-21 in non-cancer cells of the tumor microenvironment (TME) to determine its contribution to tumor progression. We report that the expression of miR-21 in cells of the tumor immune infiltrate, and in particular in macrophages, is responsible for promoting tumor growth. Absence of miR-21 expression in tumor associated macrophages (TAMs), causes a global rewiring of their transcriptional regulatory network that is skewed towards a pro-inflammatory angiostatic phenotype. This promotes an antitumoral immune response characterized by a macrophage-mediated improvement of cytotoxic T cell responses trough the induction of cytokines and chemokines including IL12 and CXCL10. These effects translate to reduction of tumor neovascularization and an induction of tumor cell death that lead to decreased in tumor growth. Additionally, using the carrier peptide pH (Low) Insertion Peptide (pHLIP) we were able to target miR-21 in TAMs which decreased tumor growth despite the expression of miR-21 in cancer cells. Consequently, miR-21 inhibition in TAMs induces an angiostatic and immunostimulatory activation with potential therapeutic implications.

[https://www.yalecancercenter.org/patient/people/yajaira\\_suarez-1.profile](https://www.yalecancercenter.org/patient/people/yajaira_suarez-1.profile)

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