



PRINCIPE FELIPE
CENTRO DE INVESTIGACION

THE FUTURE OF BIOMEDICAL RESEARCH CIPF Lecture Series

ERBB2: A bad reputation for a good fellow?

Speaker: Prof. Carlo Tacchetti

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Date: **28/06/19- 12:30 h**

Place: Salón de Actos CIPF

Abstract: ERBB2 is a ligand-less tyrosine kinase receptor expressed at very low levels in normal tissues; when overexpressed, it is involved in malignant transformation and tumorigenesis in several carcinomas. Approximately 20% of breast cancers display ERBB2 gene amplification and/or protein overexpression. In cancer cells, ERBB2 represents the preferred partner of other members of the ERBB receptor family, leading to stronger oncogenic signals, by promoting both ERK and AKT activation.

The identification of the specific signalling downstream of ERBB2 has been impaired by the lack of a ligand and of an efficient way to selectively activate the receptor.

In this seminar I will briefly review the past work on the mechanisms involved in the trafficking of the ErbB receptor as a way of modulating their signalling, and then I will show recent and unpublished results demonstrating the surprising finding that:

- the cancer-associated ERBB2 receptor promotes an anti-oncogenic signaling when directly stimulated.
- this anti-oncogenic signaling is driven by a novel and previously undescribed molecular pathway leading to the ERK-dependent AKT dephosphorylation, which we fully characterize.
- this pathway represents a novel possible therapeutic target for ERBB2-positive cancer treatment.

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