ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO
DI FARMACIA
E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **16 Ottobre 2024**
alle ore **12:00**

Dr. Marco Fiorillo

Ricercatore presso il Dipartimento di Farmacia e Scienze della Salute e della Nutrizione, Università della Calabria

(ospite di Dr.ssa Manuela Sollazzo e di Prof.ssa Anna Maria Porcelli)

terrà un seminario in lingua inglese dal titolo:

Estrogen-related receptor alpha (ERRα) signalling in breast cancer: two sides of the same coin

Area tematica:
Cancer biology

in presenza:
Aula B, Biochimica, via Irnerio 48, Bologna BO

e in streaming:
https://teams.microsoft.com/l/meetup-join/19%3aN09c0NIyEssBnF7ObCyDOQwkgDWm1qdd9f7F2nJV9fw1%40thread.tacv2/1631519544944?context=%7b%22Tid%22%3a%22e99647dc-1b08-454a-bf8c-699181b389ab%22%2c%22Oid%22%3a%225a941351-ef41-4aa4-8771-fa50a6d62ca1%22%7d

Colleghi e studenti sono cordialmente invitati

ABSTRACT

Breast cancer (BC), a leading cause of cancerrelated death in women, often exhibits resistance to conventional treatments. Here, we investigated the roles of cholesterol and mevalonate in breast cancer progression and therapy resistance. Our recent findings have revealed that these compounds activate the estrogenrelated receptor alpha (ERRα) pathway, leading to increased expression of key proteins associated with tumor aggressiveness and drug resistance. Furthermore, cholesterol-induced activation of ERRα promotes epithelialmesenchymal transition (EMT) and inflammatory responses in breast cancer cells, shaping the tumor microenvironment. Additionally, high cholesterol levels enhance macrophage infiltration, angiogenesis, and cancerassociated fibroblasts (CAFs) phenotype. Clinically, these findings have important implications for understanding treatment failure and cancer dissemination. We have defined estrogenrelated receptor alpha gene (ESRRA) signature in multiple types of breast cancer, using bioinformatic analysis of patient samples. Importantly, ESRRA expression correlates with poor prognosis, suggesting it as a potential therapeutic target. In addition, ERRα protein expression has been validated through immunohistochemistry in female patients diagnosed with invasive BC, including Luminal ER(+) BC, TNBC and metastatic lesions, as well as in the tissue surrounding the tumor. Overall, targeting the cholesterolERRα axis may offer novel strategies for combating breast cancer progression and resistance to therapy.

BIOGRAPHICAL SKETCH

Marco Fiorillo is a researcher at the Biochemistry, Molecular Biology and Clinical and Experimental Biotechnologies Lab of Department of Pharmacy and Health Nutrition Sciences (University of Calabria) since 2022. His work is focused on the study of molecular mechanisms and metabolic rewiring underlying cancer progression and on the involvement of tumor microenvironment in cancer development, progression and metastatization.