UNIVERSITÀ DI PARMA

Dipartimento di Medicina e Chirurgia

Laboratorio di Metabolismo e Biosegnalazione Cellulare

“Galectin 3 binding protein (LGALS3BP): a secreted, extra-cellular vesicle (EV)-associated biomarker and therapeutic target in human cancer”

Prof. Gianluca Sala,

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Mercoledì 15 maggio, ore 14

Aula 10

Aule G. Moruzzi Via Gramsci

Speaker: Prof. Gianluca Sala

Affiliation: Associate Professor in Biochemistry, University of Chieti-Pescara

Biosketch:

Dr. Sala holds a degree in Molecular and Cellular Biology and a PhD in Oncology and Molecular Pathology. Dr Sala has moved between academia-industry throughout the years, keeping a focus on Cellular Oncology and targeted therapeutics, before settling as an Associate Professor at the University of Chieti-Pescara (Italy).

Grants:

2016-2019 "Development and preclinical evaluation of a novel Antibody-Drug-Conjugate (ADC) targeting HER-3" (Gianluca Sala PI). Italian Association of Cancer Research (IG 2016: 287.000 €).

2022-to date "Developing new antibody-drug conjugates (ADC)s for neuroblastoma and glioblastoma" (Gianluca Sala PI). Italian Association of Cancer Research (IG 2021:539.000 €).

Patents:

• ErbB3 binding antibody (US 2013/0224220 A1)

• "Humanized anti-BAG3 antibodies" WO 2017/076878 A1

• "Endosialin Binding antibody" WO 2017/134234 A1

• "LGALS3BP antibody-drug-conjugate and its use for the treatment of cancer" WO/2019/197651

Teaching assignment (University "G D'Annunzio" of Chieti-Pescara)

• LM-41 Medicine & Surgery: Organic Chemistry/ Propaedeutic Biochemistry

• LM-46 Dentistry: General and Organic Chemistry/ Propaedeutic Biochemistry

Talk Abstract

LGALS3BP is a secreted protein expressed by many human tumors, which mediates cell adhesion, angiogenesis, and immune evasion. High levels of the protein have been significantly associated with poor clinical outcomes in patients with several solid cancers. Recent findings from multiple research groups, including our own, revealed that LGALS3BP is enriched on the surface of cancer-derived extracellular vesicles (EVs), playing a key role in regulating cancer-stroma crosstalk. Indeed, evidence has been accumulating suggesting that communication mediated by LGALS3BP-associated EVs creates a supportive environment for tumor growth.

Antibody Drug Conjugates (ADCs) are an emerging class of biopharmaceuticals that have seen an impressive increase in attention in the field of cancer therapy. Classically, ADCs have been developed using monoclonal antibodies (mAb) with high internalizing capacity, to obtain an efficient delivery of the conjugated drug within the target cell. However, recent studies have revealed that ADCs can also be generated using non-internalizing antibodies targeting tumor or stroma-associated antigens. In our laboratory, we have generated a new type of non-internalizing ADC targeting LGALS3BP, based on maytansinoid derivatives, inhibitors of tubulin polymerization. This innovative compound, named 1959sss/DM4, has been validated in several preclinical experimental models, which include melanoma, neuroblastoma, glioblastoma and a rare type of head and neck cancer, adenoid cystic carcinoma. We have also explored the clinical significance of quantifying circulating LGALS3BP protein levels in body fluids, such as blood and urine, to validate the hypothesis that it could be used as a biomarker for liquid biopsy. The potential dual role of LGALS3BP as a therapeutic target and cancer biomarker will be discussed.

Join us for this interesting seminar.