Lunedì **13 febbraio 2023** alle ore **11:00** presso l'aula D

il **Dr. NIR QVIT**

The Azrieli Faculty of Medicine in the Galilee, Bar-Ilan University.
Safed
Israel

terrà il seminario dal titolo:

Targeting Mitochondrial Dysfunction in the Treatment of Cardiovascular Disease

Protein-protein interactions (PPIs) are intimately involved in almost all biological processes, including inter- and intracellular signal transduction, gene expression, cell proliferation, and apoptosis. Therefore, they are important phenomena in basic research and promising targets for treating human disease. Nevertheless, targeting PPIs is challenging, as PPI interfaces are large, flat, and usually possess a significant degree of conformational flexibility.
Peptides are ideal candidates for targeting PPIs as they have demonstrated high conformational flexibility, increased selectivity, and are generally inexpensive. Moreover, peptide limitations, such as poor stability and inefficient crossing of cell membranes, can be overcome using peptidomimetics (modified peptides). We developed **novel algorithms to detect specific PPI interfaces** between a vital protein and only one of its many partners, based on unique interaction sites.
One example of inhibition of a specific PPI involves two proteins that regulate mitochondrial homeostasis, Pink1 and Mfn2. We developed a selective inhibitor of the Mfn2/Pink1 PPI. This inhibitor selectively hinders only the interaction between these two proteins. Importantly, it reduced cell death and improved animal outcome after ischemia reperfusion injury. Similar approaches using **rational design** can be applied for the development of various other specific PPI regulators. Furthermore, these novels, highly selective PPI inhibitors may be used as lead compounds for therapeutic applications.

La presenza della S. V. sarà molto gradita

Marta De Zotti

Il Direttore del Dipartimento
Michele Maggini