The Laboratory of Biochemistry was founded by Ioannis Georgatsos in 1976. The members of the Laboratory participate in undergraduate study programs of the Chemical and Pharmaceutical Department and a postgraduate study program of the Chemical Department.

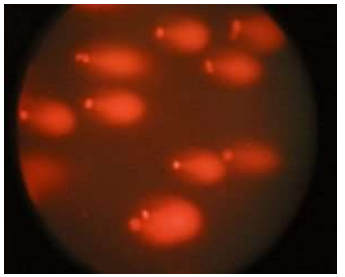
During the years of its operation the members of the Laboratory have trained many postgraduate students, while they have supervised more than 60 doctoral theses.

Pantazaki Anastasia
Professor of Biochemistry

Research Interests

1. Biochemistry

- Alzheimer's Disease- Biomarkers-Therapeutic Approaches
- Oxidative Stress
- Microbiome and Microbial Metabolites.
- Biological activity of new compounds, nanoparticles, natural products, toxic agents.
- Enzymes and natural compounds of biotechnological interest
- DNA damage with Comet assay by toxic agents-pollutants
- Antimicrobial and antifungal activity of new agents
- Iron transport systems – siderophores



2. Biotechnology

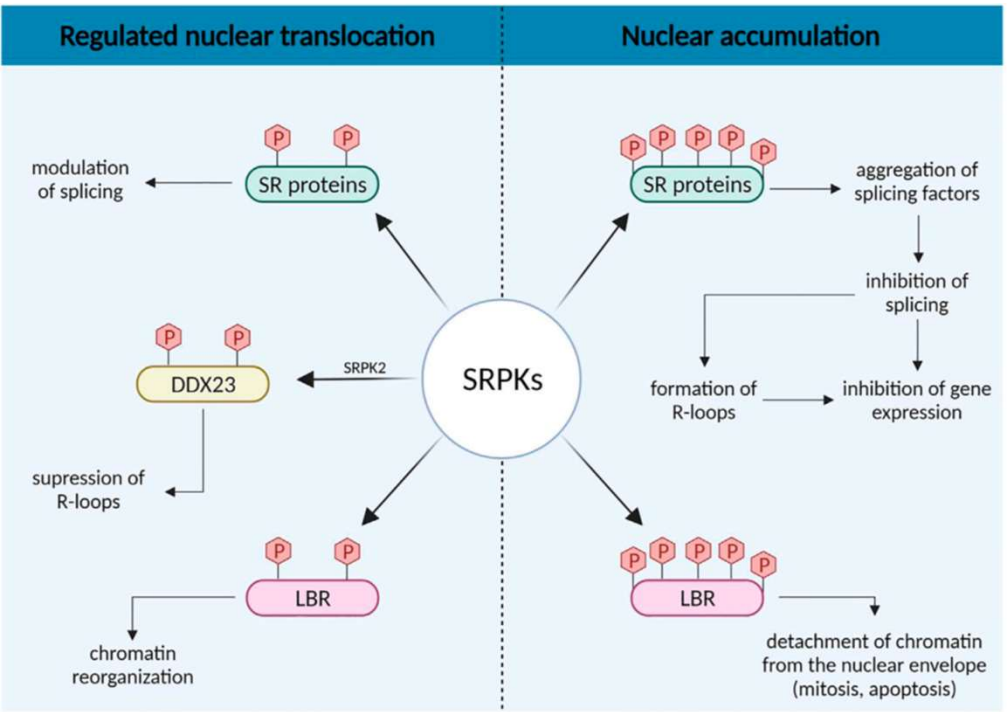
- Bacterial biodegradable biopolymer
- Microbial fermentation
- Enzymes immobilization-encapsulation techniques on nanocarriers
- Biofilm

Thomas Giannakouros
Professor of Biochemistry

Research Interests

Dr. Giannakouros' research mainly focuses on studies on post-translational modifications of proteins, especially phosphorylation.

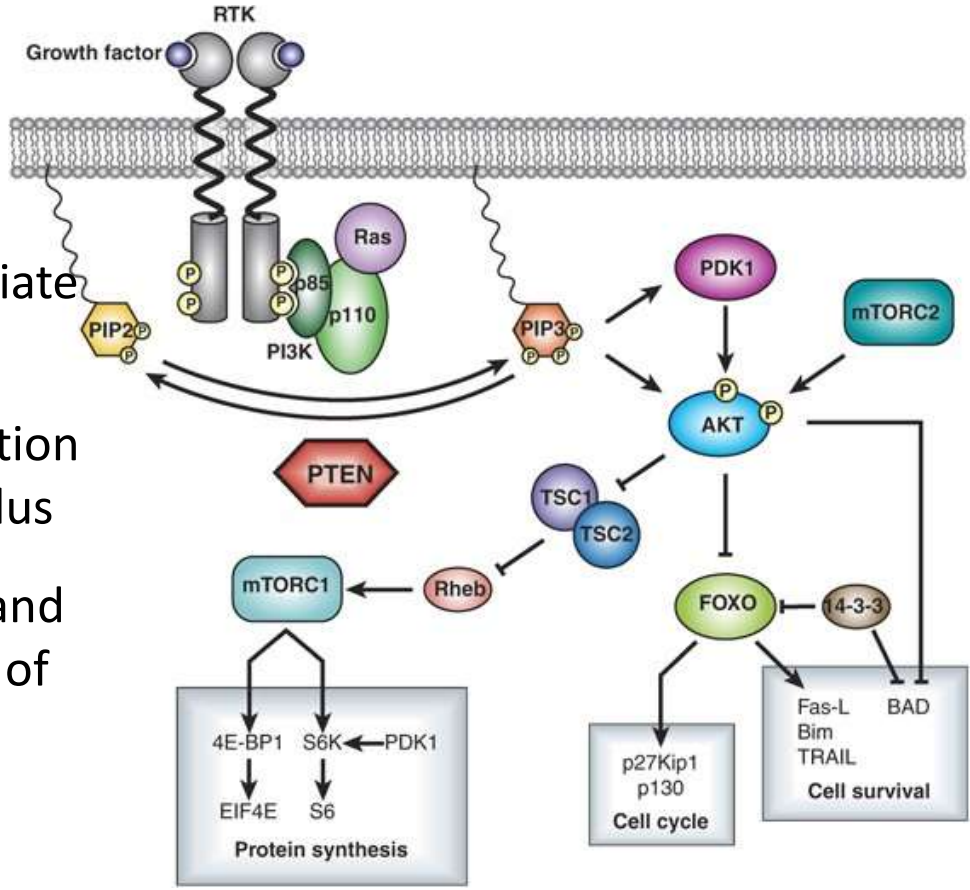
In particular, they have studied extensively the Lamin B Receptor (LBR), a protein of the inner nuclear membrane showing that LBR plays a critical role in the attachment of chromatin to the nuclear periphery, both in somatic and sperm cells, while post-translational modifications and especially phosphorylation, regulate this interaction, thus playing a crucial role in the spatial organization of chromatin.



In parallel, in collaboration with Eleni Nikolakaki they studied the post-translational modifications regulating the subcellular localization and activity of SRPK1. SRPK1 has a complex regulation mechanism that involves phosphorylation, acetylation, and the development of disulfide bonds in the spacer domain that separates the two catalytic subunits of the kinase.

Rigini Papi
Assistant Professor of Biochemistry

Research Interests



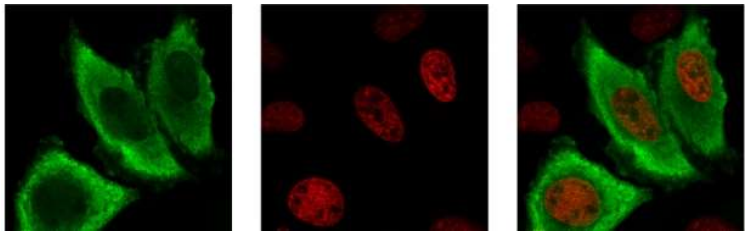
- Study of two-component signal transduction in Thermus thermophilus, detection of the appropriate signal and their cellular response
- Molecular mechanisms of synthesis and degradation of polyhydroxyalkanoates (PHAs) in T. thermophilus
- Investigation of PTEN heterozygosity, mutations and protein expression in patients with various types of cancer
- Correlation of WWP1 ligase and PTEN activity
- Correlation of the mannose binding lectin (MBL2) and ficolin 2 (FCN2) polymorphisms with the frequency of chemotherapy-induced bacterial infections
- Proteomic study of plant interactions with infectious microorganisms
- Study of the antibacterial and biological activity of various compounds

Eleni Nikolakaki
Professor of Biochemistry

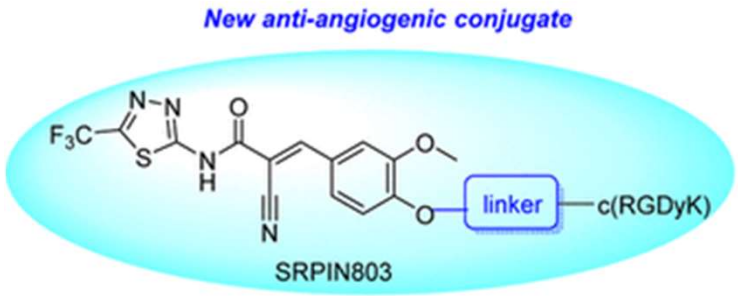
Research Interests

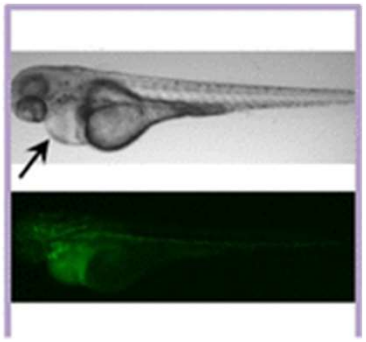
My main objective is the elucidation of signaling pathways in eukaryotic cells. More specifically, we focus on the SR family of protein kinases (SRPKs), which phosphorylate serines within arginine/serine (RS) dipeptide motifs.

Recent data suggest that SRPK1 plays a pivotal role in cancer. In this respect our current studies in collaboration with Thomas Giannakouros focus on the involvement of SRPK1 in proliferation and apoptosis of cancer cells.



Furthermore, we are trying to develop novel and potent inhibitors targeting specifically SRPK1 in collaboration with Dr. Vassiliki Sarli from the laboratory of Organic Chemistry.





Aristotle Conference on Chemistry

Thank you for your attention