Focus on Faculty #65
Raquel Aloyz

Dr Raquel Aloyz was born in Argentina and came to Montreal in the 1990's. She has been a part of the McGill community since 1996. Building on her PhD thesis, Raquel first studied biological and biochemical aspects of the cross talk between neurotransmitters and trophic signals in primary neurons. After co-authoring a number of classic papers in high impact journals such as Neuron, The Journal of Cell Biology and the Journal of Neuroscience, Raquel redirected her interests to the field of cancer research.

In 2003, Raquel joined the Lady Davis Institute (LDI) for Medical Research as an independent investigator and a year later the Oncology Department at McGill. The rich environment provided by the LDI enabled Raquel to build an impressive longitudinal biobank of primary human cancer cells donated by over 100 chronic lymphocytic leukemia (CLL) patients. Using as a model her sub-set collection of chronic lymphocytic leukemia cells and clinically relevant drugs, Raquel's studies contributed to the establishment of the role of a variety of fundamental biological processes in the resistance to anti-leukemic agents including ER stress and oxidative stress, autophagy, telomerase activity and DNA repair. Raquel's unique expertise in biochemistry, cell signaling and primary cells resources provided numerous opportunities to engage in national and international collaborations with academic and pharmaceutical partners. The relevance of Raquel's work is reflected by a record of 5000 citations with 70 peer-reviewed articles published in highly cited scientific journals plus several patents in Canada, the USA and worldwide. Key to her accomplishments, Raquel has mentored numerous undergraduate students, graduate students

and postdoctoral fellows, many of whom have continued their scientific careers in academia, industry or the health network.

In the past 7 years, Raquel has been focusing her research efforts on the study of the effect of biologically relevant metabolic environments on the resistance to tyrosine kinase inhibitors. Raquel's work showed that aerobic glycolysis (Warburg effect) is not a metabolic adaptation engaged by primary leukemic cells under metabolic stress. Notably, she reported for the first time that in primary leukemic cells, the tyrosine kinase inhibitor, Ibrutinib, alters glutamate and glucose metabolism resulting in reduced ROS scavenging capacity and enhanced dependency of fatty acid oxidation as bioenergetic source.

Among Raquel's most cherished collective accomplishments are her contributions to the foundation and establishment of the Canadian CLL meeting, the only international Canadian forum devoted to basic and clinical aspects of hematological malignancies.

In addition to her passion for scientific research, Raquel also enjoys brainstorming with her colleagues over a coffee and indulging in poetry writing. Even though Raquel works in English, lives in French and dreams in Spanish, she has written a few poems in English that can be found at the following link: http://www.dailyhaiga.org/contributors/215/raquel-aloyz-canada.

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