The work in my laboratory focuses on two main lines of research. My major research activities in basic and translational research focus on developing targeted therapies for human leukemia. I have so far obtained extremely promising results for the targeted therapies for Adult T-cell Leukemia and Acute Promyelocytic Leukemia that are being used successfully for patients therapy as a model for translational research. I am currently interested in the targeting of leukemic stem cells in chronic myeloid leukemia (CML) using different approaches including the combination of interferon alpha and arsenic trioxide as well as tyrosine kinase inhibitors of BCR-ABL. I am also interested in microRNAs and their implication in cancer, specifically breast cancer which, in Lebanon, is more aggressive and is diagnosed at a younger age than it is in the West. However, at present essentially nothing is known regarding these characteristics. Therefore, the second line of research is to determine distinctive microRNA expression patterns in Lebanese patients that can predict early onset of breast cancer.