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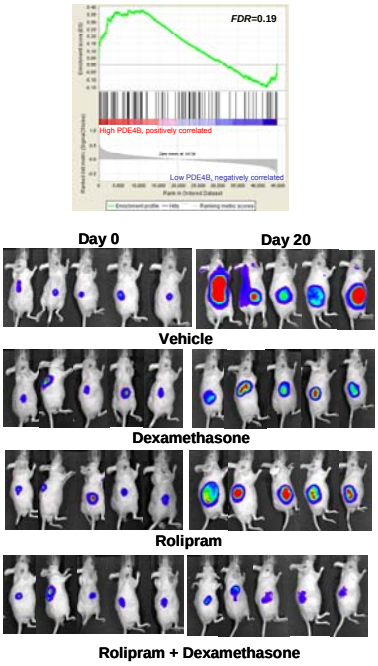
The research in our laboratory is centered on the identification and functional characterization of the genetic abnormalities found in hematologic malignancies. Studying classical genes and microRNAs, our goals are to better understand the pathogenesis of these disorders and to develop novel targeted therapeutic strategies. Our principal disease model is B-cell lymphoma.

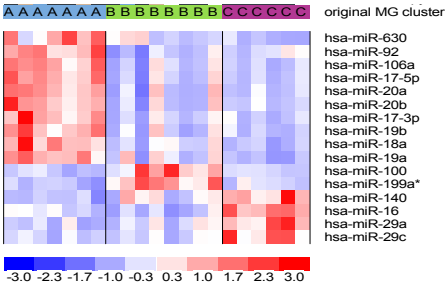
Active research lines stem from our recently published and funded work, and include:

- Combinatorial targeting of phosphodiesterase 4B and interacting survival pathways in B-cell malignancies – Figure A
- Creation of an integrative (copy number and expression) map of the microRNA genome in diffuse large B-cell lymphoma – Figure B
- Targeting of the TGFβ pathway by miRNA-155 in B-cell lymphomas – Figure C
- Define the microRNAs / NF-κB pathway interactome in lymphoid cancer – Figure D

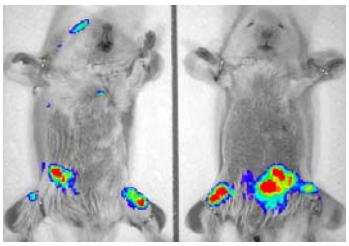
A)



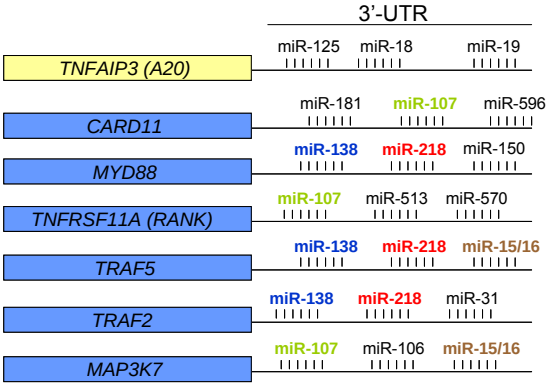
B)



C)



D)



Recent publications:

- Kim SW, Rai D, McKeller M, **Aguiar RCT.** Rational combined targeting of phosphodiesterase 4B and SYK in DLBCL. **Blood**, 113:6153-60, 2009
- Li C, Kim SW, Rai D, Bolla A, Kinney M, Robetorye R, **Aguiar RCT**. Copy number abnormalities, MYC activity and the genetic fingerprint of normal B-cells mechanistically define the microRNA profileof DLBCL. **Blood**, 113, 6681-90, 2009
- Rai D, Kim SW, McKeller MR, Dahia PLM, **Aguiar RCT.** Targeting of SMAD5 links microRNA-155 to the TGFβ pathway and lymphomagenesis. **Proc Natl Acad Sci U S A**, 107: 3111-6, 2010.
- Kim SW, Rai D**, Aguiar RC**. Gene-set enrichment analysis unveils the mechanism for the phosphodiesterase 4B control of glucocorticoid response in B-cell lymphoma **Clinical Cancer Research** 2011 Jul. PMID: 21742807