

Researcher Information Form

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Research Interest (1-2 Sentences):

My laboratory is interested in developing small molecule inhibitors of Rac-GTPases as tools tumor to slow growth and metastasis. We have identified the small molecule IODVA1 that targets the Rac1 activator, Vav3. We are testing IODVA1 in *in vivo* models of TNBC and synthesizing more potent analogs.

Unique Resources & Techniques: Vav3 inhibition, drug development, IODVA1, protein structure/function.

Representative Publications (5 Maximum, May use Hyperlink):

Anjelika Gasilina, Gurdat Premnauth, Purujit Gurjar, Jacek Biesiada, Shailaja Hegde, David Milewski, Gang Ma, Tanya V. Kalin, Edward Merino, Jarek Meller, William Seibel, José A. Cancelas, Lisa Privette Vinnedge, and **Nicolas N. Nassar** 'IODVA1, a guanidinobenzimidazole derivative, targets Rac activity and Ras-driven cancer models. *PLoS One*. (2020) Mar 12;15(3):e0229801. doi: 10.1371/journal.pone.0229801. eCollection 2020. PMID [32163428](https://pubmed.ncbi.nlm.nih.gov/32163428/).

Wei Liu, Wei Du, Xun Shang, Lei Wang, Chris Evelyn, Maria Carolina Florian, Marnie Ryan, Ahmad Rayes, Xueheng Zhao, Kenneth Setchell, Jarek Meller, Fukun Guo, **Nicolas Nassar**, Hartmut Geiger, Qishen Pang, Yi Zheng. 'Rational identification of a Cdc42 inhibitor presents a new regimen for long-term hematopoietic stem cell mobilization' *Leukemia* 33(3), 749-761 (2019). PMID: [30254339](https://pubmed.ncbi.nlm.nih.gov/30254339/)

Lynn Lee, Anjelika Gasilina, Jayeeta Roychoudhury, Jason Clark, Francis McCormack, Joseph Pressey, Michael Grimley, Robert Lorsbach, Siraj Ali, Mark Bailey, Philip Stephens, Jeffrey Ross, Vincent Miller, **Nicolas Nassar**, Ashish Kumar "Real-Time genomic profiling of histiocytoses identifies early-kinase domain BRAF alterations while improving treatment outcomes" *JCI Insight* 2(3), e89473 (2017). PMID: [28194436](https://pubmed.ncbi.nlm.nih.gov/28194436/) PMCID: PMC5291734

Susumu Goyama, Janet Schibler, Anjelika Gasilina, Mahesh Shrestha, Shan Lin, Kevin A. Link, Jianjun Chen, Susan P. Whitman, Clara D. Bloomfield, D Nicolet, Salam Assi, Anetta Ptasinska, Olaf Heidenreich, Constanze Bonifer, Toshio Kitamura, **Nicolas Nassar**, James C. Mulloy "UBASH3B/Sts-1-CBL axis regulates myeloid proliferation in human preleukemia induced by AML1-ETO" *Leukemia* **30**(3), 728-739 (2016). PMID: [26449661](#) PMCID: PMC4775400

Nicolas Nassar, Kavita Singh, Miguel Garcia-Diaz "Structure of the dominant negative S17N mutant of Ras" *Biochemistry* **49**, 1970-1974 (2010). PMID: [20131908](#) PMCID: PMC2852684