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## The Samuel Singer Lab

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Samuel Singer, MD, FACS

Soft tissue sarcoma is a heterogeneous disease with more than 50 histological subtypes, which have diverse biological behavior and – in many cases – unique genetics. Many sarcoma subtypes respond poorly to chemotherapy, so there is an urgent need for better treatment options for patients whose disease cannot be cured surgically. The major focus of my research is the discovery of genetic and epigenetic alterations in sarcoma to gain insight into sarcoma biology and find new targets for therapy.

The immediate goal of our research is to increase our understanding of sarcoma biology by discovering the alterations in DNA and RNA that cause sarcomas to develop and progress. These findings allow us to improve both the accuracy of diagnosis and the accuracy of predicting treatment outcome and survival for individual patients. These better predictions, in turn, will make it possible for patients to be given the treatment (such as a specific targeted therapy, chemotherapy, or radiation) most likely to be effective for their particular tumor.

Another goal of the research is to find new targeted therapies aimed specifically at alterations in particular tumor types. Examples of targeted therapies that I have been actively involved in developing and designing include anti-angiogenesis therapy for soft tissue sarcoma, imatinib (Gleevec®) for gastrointestinal stromal sarcoma, and cell cycle kinase inhibitor therapies (CDK4, AURKA, and PLK1), demethylating agents, HDAC inhibitors, and PPAR gamma ligands for various liposarcomas.

I am optimistic that this research will ultimately improve survival and quality of life for patients with soft tissue sarcoma.

[View Lab Overview](https://www.sloankettering.edu/research-areas/labs/samuel-singer/overview) (<https://www.sloankettering.edu/research-areas/labs/samuel-singer/overview>)



## Publications Highlights

Angeles CV, Velez A, Rios J, Laxa B, Shum D, Ruiz PD, Shen Y, Ostrovnaya I, Gualarte-Mérida R, Nacev BA, Dickson MA, Djaballah H, Okada T, Singer S. [A High-Content Screen for C/EBPalpha Expression Identifies Novel Therapeutic Agents in Dedifferentiated Liposarcoma.](#) Clin Cancer Res. 2022 Jan 1;28(1):175-186. doi: 10.1158/1078-0432.CCR-19-2486. Epub 2021 Oct 19. PMID: 34667024

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Li GZ, Okada T, Kim YM, Agaram NP, Sanchez-Vega F, Shen Y, Tsubokawa N, Rios J, Martin AS, Dickson MA, Qin LX, Socci ND, Singer S. [Rb and p53-Deficient Myxofibrosarcoma and Undifferentiated Pleomorphic Sarcoma Require Skp2 for Survival.](#) Cancer Res. 2020 Jun 15;80(12):2461-2471. doi: 10.1158/0008-5472.CAN-19-1269. Epub 2020 Mar 11. PMID: 32161142

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Mazzu YZ, Hu Y, Shen Y, Tuschl T, Singer S. [miR-193b regulates tumorigenesis in liposarcoma cells via PDGFR, TGFβ, and Wnt signaling.](#) Sci Rep. 2019 Mar 1;9(1):3197.

doi: 10.1038/s41598-019-39560-0. PMID: 30824765

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Cancer Genome Atlas Research Network. [Comprehensive and Integrated Genomic Characterization of Adult Soft Tissue Sarcomas.](#) Cell. 2017 Nov 2;171(4):950-965.e28. doi: 10.1016/j.cell.2017.10.014. PMID: 29100075

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Okada T, Lee AY, Qin LX, Agaram N, Mima T, Shen Y, O'Connor R, López-Lago MA, Craig A, Miller ML, Agius P, Molinelli E, Socci ND, Crago AM, Shima F, Sander C, Singer S. [Integrin- \$\alpha\$ 10 Dependency Identifies RAC and RICTOR as Therapeutic Targets in High-Grade Myxofibrosarcoma.](#) Cancer Discov. 2016 Oct;6(10):1148-1165. doi: 10.1158/2159-8290.CD-15-1481. PMID: 27577794

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## People


A portrait of Samuel Singer, MD, FACS, a middle-aged man with dark hair, wearing a dark suit, white shirt, and a red patterned tie. He is smiling slightly and looking towards the camera. The background is a blurred indoor setting with warm lighting.

## Samuel Singer, MD, FACS

*Chief, Gastric and Mixed Tumor Service, Vincent Astor Chair of Clinical Research and Director, Sarcoma Center at Memorial Sloan Kettering*

*Professor*

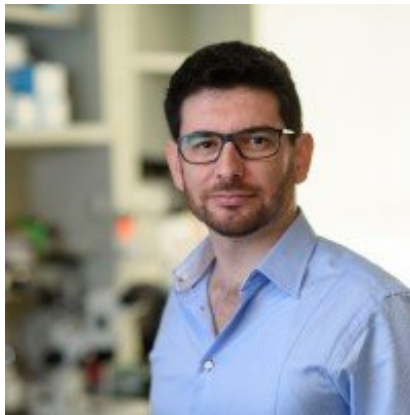
- Physician-scientist Samuel Singer studies the genomic alterations that define new targets for therapy in sarcoma. I am a surgical oncologist who specializes in the diagnosis and treatment of soft tissue sarcoma. I have extensive experience with this group of cancers, and am one of just a few surgeons in the world focused solely on treating sarcoma patients. My years of experience have enabled me to devise surgical techniques that improve the ability to completely remove these tumors. In addition to my clinical sarcoma practice, I conduct laboratory research to develop new methods to improve the diagnosis and treatment of sarcoma. I lead both a National Cancer Institute Specialized Program in Research Excellence (SPORE) and the Sarcoma Genome Project.
- MD, Harvard Medical School

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Physician profile

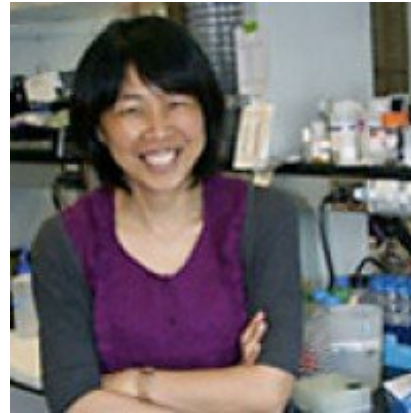
## Members

Nicole Blekhter  
Research Technician



Rodrigo Gularte-Merida  
Senior Research Scientist

Yoshinori Handa  
Research Scholar   **Lab**  
Young-mi Kim   **Alumni**  
Senior Research Scientist  
Anirudh Kulkarni   **Lab Affiliations**  
Research Technician  
Georgios Antonios Margonis  
Senior Research Scientist



Tomoyo Okada  
Senior Research Scientist

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Members of the MSK Community often work with pharmaceutical, device, biotechnology, and life sciences companies, and other organizations outside of MSK, to find safe and effective cancer treatments, to improve patient care, and to educate the health care community. These activities outside of MSK further our mission, provide productive collaborations, and promote the practical application of scientific discoveries.

MSK requires doctors, faculty members, and leaders to report (“disclose”) the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public. Not all disclosed interests and relationships present conflicts of interest. MSK reviews all disclosed interests and relationships to

assess whether a conflict of interest exists and whether formal COI management is needed.

Samuel Singer discloses the following relationships and financial interests:

*No disclosures meeting criteria for time period*

The information published here is a complement to other publicly reported data and is for a specific annual disclosure period. There may be differences between information on this and other public sites as a result of different reporting periods and/or the various ways relationships and financial interests are categorized by organizations that publish such data.

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This page and data include information for a specific MSK annual disclosure period (January 1, 2024 through disclosure submission in spring 2025). This data reflects interests that may or may not still exist. This data is updated annually.

Learn more about MSK's COI policies [here](#) . For questions regarding MSK's COI-related policies and procedures, email MSK's Compliance Office at [ecoi@mskcc.org](mailto:ecoi@mskcc.org) .

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