HELLENIC REPUBLIC
MINISTRY OF DEVELOPMENT AND INVESTMENTS
GENERAL SECRETARIAT FOR RESEARCH AND INNOVATION

FORTH
FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS
INSTITUTE OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Heraklion 17/09/2021

ANNOUNCEMENT

Summary

Dr. Lionakis is a physician-scientist and Head of the Fungal Pathogenesis Section in NIAID's Laboratory of Clinical Immunology and Microbiology where he is Deputy Chief. He obtained his MD and ScD degrees from the University of Crete, Greece. He did postdoctoral research training at MD Anderson Cancer Center, Houston, followed by Internal Medicine Residency at Baylor College of Medicine, Houston, and Infectious Disease Fellowship at NIAID/NIH. Following research training at NIAID related to how chemotactic factors regulate the innate immune response in invasive candidiasis, he established his own laboratory in 2012 at NIAID and received tenure in 2017. Dr. Lionakis is a Member of the American Society for Clinical Investigation (ASCI), a Fellow of the American Academy of Microbiology (AAM), a Fellow of the European Confederation of Medical Mycology (FECMM), and a Fellow of the Infectious Diseases Society of America (IDSA). He is the recipient of the NIH Director's award, the NIAID Merit Award, the Oswald Avery Award for Early Achievement from the IDSA, the Junior Investigator Award from the Immunocompromised Host Society (ICHS), and the American College of Physicians (ACP) Walter J. McDonald Award for Early Career Physicians.

Dr. Lionakis's integrated bench-to-bedside research program is based on clinically relevant mouse models of fungal disease and large cohorts of patients with inherited or acquired susceptibility to fungal infections and focuses on understanding why certain patients develop severe, recurrent, and/or treatment-refractory fungal disease. Thus far, his work has defined precise genetic, biochemical, immunologic, and cellular disease mechanisms that have led to targeted immunotherapies. He has identified interferonopathy as a critical driver of mucosal candidiasis in patients with APECED and has identified local neutropenia due to impaired microglial-neutrophil crosstalk as a critical driver of central nervous system-targeted candidiasis in patients with CARD9 deficiency. He has delineated novel inherited (CARD9 deficiency, STAT3 haploinsufficiency, and ISG15 deficiency) and acquired (BTK inhibitors) immunodeficiency states that increase invasive mold infection susceptibility.

Selected publications

Break TJ, Oikonomou V, Dutzan N, Desai JV, Swidergall M, Freiwald T, Chauss D, Harrison OJ, Alejo J, Williams DW, Pittaluga S, Lee CR, Bouladoux N, Swamydas M, Hoffman KW, Greenwell-Wild T, Bruno VM, Rosen LB, Lwin W, Renteria A, Pontejo SM, Shannon JP, Myles IA, Olbrich P, Ferré EMN, Schmitt M, Martin D; Genomics and Computational Biology Core, Barber DL, Solis NV, Notarangelo LD, Serreze DV, Matsumoto M, Hickman HD, Murphy PM, Anderson MS, Lim JK, Holland SM, Filler SG, Afzali B, Belkaid Y, Moutsopoulos NM, Lionakis MS. Aberrant type 1 immunity drives susceptibility to mucosal fungal infections. *Science*. 2021 Jan 15;371(6526).

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Complete list of publications
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Lab website link
https://www.niaid.nih.gov/research/michail-s-lionakis-md-scd

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