

NAME OF LABORATORY: The Genetics Institute Research and development Laboratory

PI & Director Department: Prof. Avi Orr-Urtreger MD, PhD

Laboratory Manager: Dr. Mali Gana-Weisz PhD

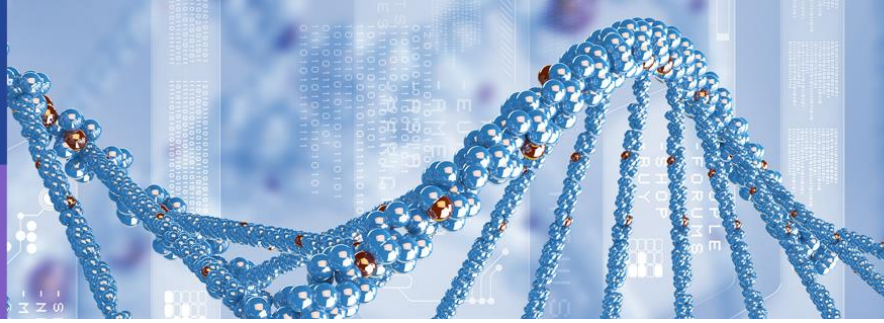
Research studies:

- Discover early biological markers of Parkinson's disease in affected individuals and their relatives, of different ethnic groups.
- Discover genetic and epigenetic variants in Parkinson's disease patients that have an effect on the disease penetrance, the age at onset, disease severity and progression (identifying modifiers of Parkinson's disease).
- Decipher the molecular basis and cellular pathways that lead to Parkinson's disease, on different genetic backgrounds, by using comparative cellular models in Parkinson's patients and controls.
- In-depth analysis and characterization of the lysosomal autophagy pathway in Parkinson's disease patients and patients affected with LBD (Lewy body disease).
- In-depth genetics analysis and characterization of genes involved in the immune system, the nerve system, and inflammation in Parkinson's disease.
- Discover genes and genetic variants that protect individuals from developing Parkinson's disease, or contribute to the delay of the disease onset.
- Determine the genetic basis of amyotrophic lateral sclerosis (ALS) in different ethnic groups, in patients with familial history of ALS (familial ALS) and in sporadic cases (Sporadic ALS).
- Identify new mutations underlying ALS, and develop cellular models to understand the biological pathways involved in ALS.
- Characterize the influence of epigenetics in ALS.

Methods:

- The usage of SNP chips to determine the alleles at the genome level.
- The usage of expression microarrays to quantitate gene expression at the genome level.
- Next generation sequencing (NGS)- DNA and RNA libraries followed by massive parallel sequencing.
- Genotyping determination in different populations by TaqMan assays and PCR.
- Cellular models- usage of skin biopsies to determine the influence of different oxidative stress factors on cell viability in patients and controls.

Staff: Dr. Mali Gana-Weisz, Dr. Orly Goldstein, Omri Nayshool, Tal Glinka, Hila Kobo, Dr. Helena Yegev- More



Active Grants:

- The Michael J. Fox Foundation for Parkinson's Research (MJFF) Parkinson's Disease, Ashkenazi Jews and LRRK2 consortium – Genetics Arm
- ALS Association (USA), ALSA Grant ID 47717: Genetics of amyotrophic lateral sclerosis in different ethnic groups of sporadic patient of Jewish origin.
- The Michael J. Fox Foundation for Parkinson's Research (MJFF) Parkinson's Disease LRRK2: a biorepository.
- The Michael J. Fox Foundation for Parkinson's Research (MJFF) Identify LRRK2 modifiers of Age of Onset of Parkinson's Disease
- The Michael J. Fox Foundation for Parkinson's Research (MJFF) Peripheral blood based gene transcript biomarkers for prediction of Parkinson's Disease
- Chief Scientist Department of Health Israel Grant No. 3-10711: Comprehensive unbiased risk factor assessment for genetics and environment in Parkinson's disease – European COURAGE PD
- The Michael J. Fox Foundation for Parkinson's Research (MJFF) The Parkinson's Progression Markers Initiative

Collaborations:

- The Neurology department and the movement disorder unit, Tel Aviv Sourasky Medical Center, Israel.
- Michael J Fox foundation, and scientists around the world associated with this foundation.
- Telethon Institute of Genetics and Medicine (TIGEM) , Italy

Contact us:

aviorr@tlvmc.gov.il

maligw@tlvmc.gov.il