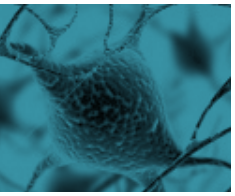

SUCCESSFUL**PROJECTS**

PADRE \\ PHARMACOGENOMICS OF ANTIDEPRESSANT DRUG RESPONSE (PADRE): TENTATIVE DRUG RESPONSE BIOMARKERS FROM HUMAN LYMPHOBLASTOID CELLS.

Austria\ Canada \ Finland \ France \ Germany \ Italy \ Israel \ Luxemburg \ Poland \ Romania \ Spain

Although several classes of antidepressant drugs are now available for treating major depression, no tools are available for selecting the most appropriate drug for the individual patient. This project aims to develop and validate a functional antidepressant drug response assay, based on an individual's genomic and transcriptomic information, for assessing pharmacogenomic variability between individuals. Growth inhibition by different classes of antidepressants will be compared systematically in human lymphoblastoid cell lines (LCLs) of the Israel National Laboratory for the Genetics of Israeli Populations. Since the antidepressant drug-mediated growth inhibition effect of an individual LCL has been shown to be stable, and to reflect drug class-specific differences, we aim to use this tool to study individual variability in molecular drug effects. Candidate genes derived from this approach together with candidate genes from the recent genome wide clinical antidepressant drug response studies will be functionally characterized and differences in transcriptomics will be compared in LCLs and primary blood lymphocytes from individual patients clinically characterized for antidepressant drug response. Tentative biomarkers of drug response will then be transformed to a pharmacogenetic diagnostic test which will be studied and validated in large cohorts of patients characterized for antidepressant drug response.

This project is situated in the gap between the complex clinical situation of antidepressant drug therapy, and modern genome-wide tools for functional pharmacogenetic assays. It serves the need to predict which of the several available antidepressant drug classes will work most likely in an individual depressed patient.

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