

Pharmacogenetics of Asthma Treatment (PHAT)

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Using genetics to predict responders to asthma therapy, based upon understanding of asthma pathways and clinically significant variation

Funded by NHLBI

Pharmacogenomics and Risk of Cardiovascular Disease (PARC)

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Defining genetic contributions to differences among individuals in their responses to statin drugs and cardiovascular disease risk

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Amish Pharmacogenomics of Antiplatelet Intervention Study (PAPI)

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Understanding genetic determinants of responses that vary among people taking anti-platelet agents used to treat and prevent cardiovascular disease

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PharmGKB: Catalyzing Research in Pharmacogenetics

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Designing a knowledge base to link phenotypes to genotypes in pharmacogenetics and pharmacogenomics, to be used as a tool to enable future research efforts

Funded by NIGMS, NHLBI, NHGRI, and NLM

A goal of the PGRN and PharmGKB is to aid all researchers in understanding how genes vary among individuals, and how that affects drug safety and efficacy. The network hopes to set standards for future research studies, and make scientific recommendations that will ultimately impact the clinical use of drugs.



Pharmacogenetics Research Network

National Institutes of Health

U.S. Department of Health & Human Services

The NIH Pharmacogenetics Research Network (PGRN) is a nationwide collaboration of researchers studying the contribution of genetics to predicting responses to a wide variety of medicines. The overall aims of the groups are to discover important drug pathways, to identify sequence variants in relevant genes, and to establish biological relationships to clinical drug responses. Since its inception in 2000, scientists have studied genes and medications given for a range of diseases, including asthma, cancer, heart disease, and depression.

www.nigms.nih.gov/pharmacogenetics

PharmGKB

The Pharmacogenetics and Pharmacogenomics Knowledge Base (PharmGKB) is an integrated knowledge base for pharmacogenetics linking phenotypes and genotypes. It is available for the entire scientific community to make deposits and to use the data.

- A web-based format for pharmacogenetics knowledge
- Curated, linked genotypes and phenotypes
- Genomic, molecular and cellular, and clinical datasets
- Annotated, interactive, consensus drug pathways
- Automated methods for identifying relationships
- Community-based literature submissions
- Access to the entire research community

www.pharmgkb.org

Research Groups

Pharmacogenetics of Membrane Transporters (PMT)

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Studying membrane transporter genes in ethnically diverse samples, determining cellular phenotypes, and correlating variants with the clinical response to antidepressants

Funded by NIGMS, NIMH, and NCI

Comprehensive Research on Expressed Alleles in Therapeutic Intervention (CREATE)

Howard L. McLeod, PharmD, Washington University

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Gary Stormo, PhD, Washington University
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Identifying pathways of anti-cancer drugs, taking novel approaches to pathway dissection, and functionally assessing variants

Funded by NIGMS and NCI

Pharmacogenomics of Arrhythmia Therapy (PAT)

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Examining genes that modulate cardiac rhythm, accruing patients with QT responses to therapy, and evaluating drug responses in atrial fibrillation

Funded by NHLBI

Consortium on Breast Cancer Pharmacogenomics (COBRA)

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Describing normal functions of estrogen, and how genetic variation contributes to efficacy and toxicity of endocrine treatments for breast cancer

Funded by NIGMS, NIEHS, and ORWH

Pharmacogenomic Evaluation of the Antihypertensive Response (PEAR)

Julie A. Johnson, PharmD, University of Florida

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Arlene B. Chapman, MD, Emory University
Andrei Rodin, PhD, University of Texas, Houston

Identifying gene variants involved in responses to drugs commonly used for hypertension, a beta-blocker and a thiazide diuretic, to predict therapeutic and adverse responses

Funded by NIGMS

Pharmacogenetics of Nicotine Addiction and Treatment (PNAT)

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Investigating the genetic basis of nicotine addiction and influences on responses to drug therapies used for smoking cessation

Funded by NIDA, NIGMS, and NCI

Pharmacogenetics of Anticancer Agents Research Group (PAAR)

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Elucidating the impact of germ-line variants on the efficacy and adverse effects of anti-cancer drugs used to treat colorectal cancer and childhood leukemias

Funded by NIGMS and NCI

Pharmacogenetics of Phase II Drug Metabolizing Enzymes (PPII)

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Discovering variants and identifying mechanisms involved in phase II conjugating enzymes controlling biotransformation of drugs, hormones, and neurotransmitters

Funded by NIGMS and NCI