Metabolomics Discovery Panel

DHMRI's Metabolomics Discovery Panel can facilitate your research needs in global profiling analysis, with our in-house library providing excellent coverage of metabolites involved in primary metabolism. Primary metabolic processes are critical for maintaining cellular homeostasis via conversion of energy sources to key building blocks for secondary metabolites and macromolecules such as proteins, lipids, nucleic acids etc., and the clearance of resulting waste products. Our untargeted analysis of *in vivo* or *in vitro* derived samples provides an overview of this metabolic landscape where fluctuations or patterns can provide valuable insight into complex, life-sustaining biochemical reactions associated with:

- **Growth**
- **Development**
- **Reproduction**
- **Structural Maintenance**
- **Environmental Responses**

DHMRI's Discovery Panel is an ideal tool to support research and development in any area concerned with evaluation, diagnosis, or perturbation of critical metabolic states for Pharmaceutical, Biotechnology, Food, Nutrition, and AgBiotech applications associated with:

- Diet
- Exercise
- Disease
- Product efficacy and impact, including:
  - Therapeutics
  - Foods & Food Additives
  - Supplements

Library

The Metabolomics Discovery Panel contains 600 individual compounds listed alphabetically in the pages below.

Classes of compounds covered by the platform include:

- Carboxylic Acids, Amino Acids
- Biogenic Amines, Polyamines
- Nucleotides, Co-Enzymes & Vitamins
- Mono- and Disaccharides
- Fatty Acids, Lipids, Steroids & Hormones

Analytical Method

Dual-platform MS methodology utilizing both positive and negative ion mode UPLC-QTOF-MS coupled with two-dimensional GC-MS.

Observations

The Metabolomics Discovery Panel allows for the identification of up to 600 metabolites. Specific observations depend on the sample submitted, especially those where metabolic perturbation or physiological dysfunction may be present.

Two-dimensional GC-MS

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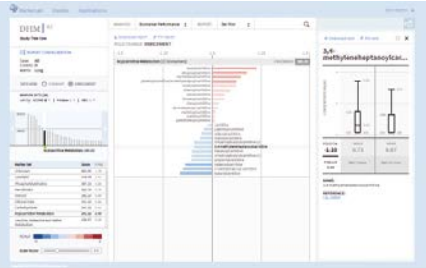
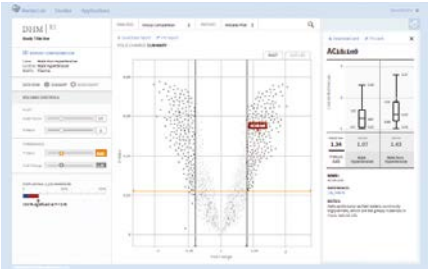
Data Reporting and Visualization

One of the challenges when undertaking the interpretation of complex metabolomics datasets is the visualization of the data for identification of biological significance. Patterns can emerge among groups of metabolites not necessarily from a single biological pathway, but as a "signature" indicative of a metabolic perturbation across multiple pathways.

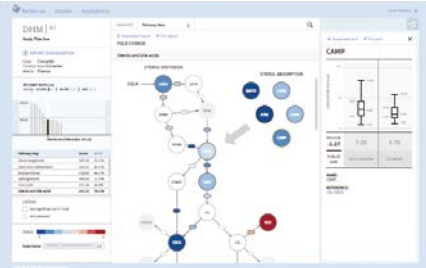
To aid in data visualization and reporting, DHMRI can provide access to the powerful MarkerLab® data evaluation software.



Bar plot



Volcano plot



Pathway maps

DHMRI Metabolomics Discovery Panel Compounds

- (2-Aminoethyl)Phosphonate
- 1,3-Diaminopropane
- 10-Hydroxydecanoate
- 1-Aminocyclopropanecarboxylate
- 1-Hydroxy-2-Naphthoate
- 1-Methyladenosine
- 1-Methylhistidine
- 1-Methylnicotinamide
- 1-Phenylethanol
- 2,3-Butanediol
- 2,3-Diaminopropionate
- 2,3-Dihydroxybenzoate
- 2′,4′-Dihydroxyacetophenone
- 2,4-Dihydroxypteridine
- 2,5-Dihydroxybenzoate
- 2,5-Dimethylpyrazine
- 2,6-Dihydroxypyridine
- 25-Hydroxycholesterol
- 2-Acetamido-2-Deoxy-Beta-D-Glucosylamine
- 2-Aminoisobutyrate
- 2-Aminophenol
- 2-Deoxyglucose
- 2-Hydroxy-4-(Methylthio)Butanoate
- 2-Hydroxybutyrate
- 2-Hydroxyphenylacetate
- 2-Hydroxypyridine
- 2-Methoxyethanol
- 2-Methylbutanal
- 2-Methylglutarate
- 2-Methylmaleate
- 2-Methylpropanal
- 2-Oxobutanoate
- 2-Phosphoglycerate
- 2-Propenoate
- 2-Quinolinecarboxylate
- 2-Undecanone
- 3-(2-Hydroxyphenyl)Propanoate
- 3-(4-Hydroxyphenyl)Pyruvate
- 3,4 Dihydroxymandelate
- 3,4-Dihydroxybenzoate
- 3,4-Dihydroxyphenylacetate
- 3,4-Dihydroxyphenylglycol
- 3,5-Diiodothyronine
- 3,5-Diiodotyrosine
- 3-Amino-4-Hydroxybenzoate
- 3-Amino-5-Hydroxybenzoate
- 3-Dehydroshikimate
- 3-Hydroxy-3-Methylglutaryl-CoA
- 3-Hydroxyanthranilate
- 3-Hydroxybenzaldehyde
- 3-Hydroxybenzoate
- 3-Hydroxybenzyl Alcohol
- 3-Hydroxybutanoate
- 3-Hydroxymethylglutarate
- 3-Hydroxyphenylacetate
- 3-Methoxy-4-Hydroxymandelate
- 3-Methoxytyramine
- 3-Methoxytyrosine
- 3-Methyl-2-Oxindole
- 3-Methyl-2-Oxovalerate
- 3-Methyladenine
- 3-Methylcrotonyl-CoA
- 3-Methylhistamine
- 3-Nitrotyrosine
- 3-Phosphoglycerate
- 3-Sulfinoalanine
- 4-Acetamidobutanoate
- 4-Aminobenzoate
- 4-Coumarate
- 4-Guanidinobutanoate
- 4-Hydroxy-3-Methoxyphenylglycol
- 4-Hydroxybenzaldehyde
- 4-Hydroxybenzoate
- 4-Hydroxyphenylglycine
- 4-Imidazoleacetate
- 4-Methylcatechol
- 4-Pyridoxate
- 4-Quinolinecarboxylate
- 5,6 Dimethylbenzimidazole
- 5-Aminolevulinate
- 5-Aminopentanoate
- 5′-Deoxyadenosine
- 5-Hydroxyindoleacetate
- 5-Hydroxylysine
- 5-Hydroxytryptophan
- 5-Methylcytosine
- 5-Valerolactone
- 6-Carboxyhexanoate
- 6-Hydroxydopamine
- 6-Hydroxynicotinate
- 6-Phosphogluconate
- 7-Dehydrocholesterol
- Acetoacetate

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- Acetoin
- Acetylcholine
- Acetylphosphate
- Adenine
- Adenosine
- Adenosine 2′,3′-Cyclic Phosphate
- Adenosine 3′,5′-Diphosphate
- Adenosine Diphosphate
- Adenosine Diphosphate Ribose
- Adenosine Monophosphate
- Adenosine Triphosphate
- Adenosine Triphosphate
- Adipate
- ADP-Glucose
- Agmatine Sulfate
- AICAR
- Alanine
- Allantoin
- Allose
- Allothreonine
- Allyl Isothiocyanate
- Alpha-D-Glucose
- Alpha-Hydroxyisobutyrate
- Alpha-Tocopherol
- Aminoadipate
- Aminoisobutanoate
- Aniline
- Aniline-2-Sulfonate
- Anserine
- Anthranilate
- Arabinose
- Arabitol
- Arachidate
- Arginine
- Ascorbate
- Asparagine
- Aspartate
- Azelate
- Benzaldehyde
- Benzoate
- Benzyl Alcohol
- Benzylamine
- Beta-Alanine
- Beta-Carotene
- Beta-Glycerophosphate
- Betaine
- Beta-Nicotinamide Adenine Dinucleotide
- Bilirubin
- Biliverdin
- Biotin
- Bis(2-Ethylhexyl)phthalate
- Butanoate
- Cadaverine
- Caffeate
- Caffeine
- Caprylate
- Carbamoyl Phosphate
- Carnitine
- Carnosine
- CDP-Ethanolamine
- Cellobiose
- Chenodeoxycholate
- Cholate
- Cholesteryl Oleate
- Cholesteryl Palmitate
- Choline
- Cis-4-Hydroxy-D-Proline
- Citicoline
- Citramalate
- Citrate
- Citrulline
- Coenzyme A
- Coenzyme Q10
- Cortexolone
- Corticosterone
- Cortisol
- Cortisol 21-Acetate
- Cortisone
- Creatine
- Creatinine
- Cyanocobalamin
- Cyclic AMP
- Cyclic GMP
- Cyclopentanone
- Cystathionine
- Cysteamine
- Cysteate
- Cysteine
- Cysteinylglycine
- Cystine
- Cytidine
- Cytidine 2′,3′-Cyclic Phosphate
- Cytidine Diphosphate
- Cytidine Monophosphate
- Cytidine Monophosphate
- Cytidine Triphosphate
- Cytochrome C
- Cytosine
- D-Alanine
- D-Aspartate
- Decanoate
- Dehydroascorbate
- Deoxyadenosine
- Deoxyadenosine Monophosphate
- Deoxyadenosine Triphosphate
- Deoxycarnitine
- Deoxycholate
- Deoxycorticosterone Acetate
- Deoxycytidine
- Deoxycytidine Diphosphate
- Deoxycytidine Monophosphate
- Deoxyguanosine
- Deoxyguanosine Diphosphate
- Deoxyguanosine Monophosphate
- Deoxyguanosine Triphosphate
- Deoxyribose
- Deoxyuridine
- Deoxyuridine Monophosphate
- Deoxyuridine Triphosphate
- Desmosterol
- Dethiobiotin
- Diacetyl
- Diaminopimelate
- Didecanoyl-Glycerophosphocholine
- Diethanolamine
- Diethyl 2-Methyl-3-Oxosuccinate
- Dihydrobiopterin
- Dihydrofolate
- Dihydroorotate
- Dihydrouracil
- Dihydroxyacetone phosphate
- Dihydroxyfumarate
- Dipalmitoylglycerol
- Dipalmitoyl-Phosphatidylcholine
- Dipalmitoyl-Phosphoethanolamine
- Docosahexaenoate
- Dopamine
- D-Ornithine
- dTDP-Glucose
- D-Tryptophan
- Eicosapentaenoate
- Elaidate
- Epinephrine
- Erucate
- Erythritol
- Estradiol-17Alpha
- Ethanolamine
- Ethanolamine Phosphate
- Ethyl 3-Indoleacetate
- Ethyl 3-Ureidopropionate
- Ethylmalonate
- Ferulate
- Flavin Adenine Dinucleotide
- Folate
- Formamide
- Fructose
- Fructose 6-Phosphate
- Fructose Bisphosphate
- Fucose
- Fumarate
- Galactarate
- Galactitol
- Galactosamine
- Galactose
- Galactose 1-Phosphate
- Galacturonate
- Gamma,Gamma-Dimethylallyl Pyrophosphate
- Gamma-Aminobutyrate
- Gamma-Linolenate
- Geranyl Diphosphate
- Gluconate

- Gluconolactone
- Glucosaminate
- Glucosamine
- Glucosamine 6-Phosphate
- Glucosamine 6-Sulfate
- Glucose 1-Phosphate
- Glucose 6-Phosphate
- Glucuronate
- Glucuronolactone
- Glutamine
- Glutarate
- Glutarylcarnitine
- Glutathione Reduced
- Glyceraldehyde
- Glyceraldehyde 3-Phosphate
- Glycerate
- Glycerol
- Glycerol 3-Phosphate
- Glycerol-Myristate
- Glyceryl Trimyristate
- Glyceryl Tripalmitate
- Glycine
- Glycochenodeoxycholate
- Glycocholate
- Glycolaldehyde
- Glycolate
- Glyoxylate
- Guaiacol
- Guanidinoacetate
- Guanidinosuccinate
- Guanine
- Guanosine
- Guanosine Diphosphate
- Guanosine Diphosphate Mannose
- Guanosine Monophosphate
- Guanosine Triphosphate
- Heptadecanoate
- Heptanoate
- Hexadecanol
- Hexanoate
- Hippurate
- Histamine
- Histidine
- Histidinol
- Homocysteine
- Homocysteine Thiolactone
- Homocystine
- Homogentisate
- Homoserine
- Homovanillate
- Hydroquinone
- Hydroxykynurenine
- Hydroxyphenyllactate
- Hydroxypyruvate
- Hypotaurine
- Hypoxanthine
- Indole
- Indole-3-Acetamide
- Indole-3-Acetate
- Indole-3-Ethanol
- Indole-3-Methyl Acetate
- Indole-3-Pyruvate
- Indoleacetaldehyde
- Indoxyl Sulfate
- Inosine
- Inosine Diphosphate
- Inosine Monophosphate
- Inosine Triphosphate
- Isobutyrate
- Isocitrate
- Isoleucine
- Isopentenyl Pyrophosphate
- Itaconate
- Ketoleucine
- Kynurenate
- Kynurenine
- Lactate
- Lactose
- Lanosterol
- Laurate
- Lauroylcarnitine
- L-DOPA
- Leucine
- L-Gulonolactone
- Linoleate
- Liothyronine
- Lipoamide
- Lithocholate
- Lithocholyltaurine
- L-Tryptophan
- L-Tryptophanamide
- Lumichrome
- Lysine
- Lyxose
- Malate
- Maleamate
- Maleate
- Maleimide
- Malonate
- Maltose
- Mandelate
- Mannitol
- Mannosamine
- Mannose
- Mannose 6-Phosphate
- Melanin
- Melatonin
- Melibiose
- Menaquinone
- Mercaptopyruvate
- Meso-Tartrate
- Mesoxalate
- Methionine
- Methionine Sulfoximine
- Methyglutarate
- Methyl 4-Aminobutyrate
- Methyl Acetoacetate
- Methyl Galactoside
- Methyl Jasmonate
- Methyl Vanillate
- Methylguanidine
- Methylmalonate
- Methylthioadenosine
- Mevalolactone
- Mevalonate
- Monoethylmalonate
- Monomethylglutarate
- Myoinositol
- Myristate
- N,N-Dimethyl-1,4-Phenylenediamine
- N,N-Dimethylarginine
- N1-Acetylspermine
- N6-(Delta2-Isopentenyl)-Adenine
- N-Acetylalanine
- N-Acetylasparagine
- N-Acetylaspartate
- N-Acetylcysteine
- N-Acetylgalactosamine
- N-Acetylglucosamine
- N-Acetylglutamate
- N-Acetylglycine
- N-Acetylleucine
- N-Acetylmannosamine
- N-Acetylmethionine
- N-Acetylneuraminate
- N-Acetylphenylalanine
- N-Acetylproline
- N-Acetylputrescine
- N-Acetylserine
- N-Acetylserotonin
- N-Acetyltryptophan
- N-Alpha-Acetyllysine
- Nervonate
- N-Formylglycine
- N-Formylmethionine
- Nicotinamide
- Nicotinamide Adenine Dinucleotide Phosphate
- Nicotinamide Hypoxanthine Dinucleotide
- Nicotinamide Mononucleotide
- Nicotinate
- Nicotine
- Nicotinic Acid Adenine Dinucleotide Phosphate
- N-Methylaspartate
- N-Methylglutamate
- N-Methyltryptamine
- Nonanoate
- Noradrenaline
- Norleucine

- Normetanephrine
- Norspermidine
- Norvaline
- O-Acetylcarnitine
- O-Acetylserine
- Oleate
- Oleoyl-Glycerol
- Omega-Hydroxydodecanoate
- O-Phosphoethanolamine
- O-Phosphoserine
- Ophthalmate
- Ornithine
- Orotate
- O-Succinyl-Homoserine
- Oxalate
- Oxaloacetate
- Oxalomalate
- Oxoadipate
- Oxoglutarate
- Oxoproline (5-oxo?)
- Palatinose
- Palmitate
- Palmitoleate
- Palmitoylcarnitine
- Pantolactone
- Pantothenate
- Paraxanthine
- Pentanoate
- Petroselinate
- Phenethylamine
- Phenol
- Phenyl Acetate
- Phenylacetaldehyde
- Phenylacetate
- Phenylalanine
- Phenylethanolamine
- Phenylpyruvate
- Phosphocreatine
- Phosphoenolpyruvate
- Phosphonoacetate
- Phosphoribosyl Pyrophosphate
- Phosphorylcholine
- Phosphoserine
- P-Hydroxyphenylacetate
- Phylloquinone
- Phytate
- Picolinate
- Pipecolate
- P-Octopamine
- Pregnenolone Sulfate
- Prenol
- Proline
- Propanoate
- Protoporphyrin
- Psicose
- Pterin
- Purine
- Putrescine
- Pyrazole
- Pyridoxal
- Pyridoxal Phosphate
- Pyridoxamine
- Pyridoxine
- Pyrimidine
- Pyrocatechol
- Pyroglutamate
- Pyrrole-2-Carboxylate
- Pyruvate
- Pyruvic Aldehyde
- Quinate
- Quinolinate
- Quinoline
- Raffinose
- Resorcinol Monoacetate
- Retinoate
- Retinol
- Retinyl Palmitate
- Rhamnose
- Ribitol
- Riboflavin
- Ribose
- Ribose 1,5-Bisphosphate
- Ribose 5-Phosphate
- Rosmarinate
- Saccharate
- S-Adenosylhomocysteine
- S-Adenosylmethionine
- Salicylamide
- Salicylate
- Salsolinol
- Sarcosine
- S-Carboxymethylcysteine
- Sebacate
- Selenocystamine
- Selenomethionine
- Serine
- Serotonin
- S-Hexyl-Glutathione
- Shikimate
- Sorbate
- Sorbitol
- Sorbose
- Spermidine
- Spermine
- Sphinganine
- Sphingomyelin
- Squalene
- Stachyose
- Stearate
- Suberate
- Succinate
- Succinate Semialdehyde
- Sucrose
- Tagatose
- Tartrate
- Taurine
- Tetrahydrocortisol
- Tetrahydrofolate
- Theobromine
- Theophylline
- Thiamine
- Thiamine Monophosphate
- Thiamine Pyrophosphate
- Thiopurine S-Methylether
- Thiourea
- Threonine
- Thymidine
- Thymidine Monophosphate
- Thymidine-Monophosphate
- Thymine
- Thyrotropin Releasing Hormone
- Thyroxine
- Trans-4-Hydroxyproline
- Trans-Aconitate
- Trans-Cinnamaldehyde
- Trans-Cinnamate
- Trans-Cyclohexanediol
- Trehalose
- Tricosanoate
- Trigonelline
- Trimethylamine
- Trimethyllysine
- Tryptamine
- Tyramine
- Tyrosine
- UDP-Glucuronate
- UDP-N-Acetylgalactosamine
- UDP-N-Acetylglucosamine
- Uracil
- Uracil 5-Carboxylate
- Urate
- Ureidopropionate
- Uridine
- Uridine Diphosphate
- Uridine Diphosphate Glucose
- Uridine Diphosphategalactose
- Uridine Monophosphate
- Uridine Triphosphate
- Urocanate
- Ursodeoxycholate
- Valine
- Vitamin D2
- Xanthine
- Xanthosine
- Xanthosine Monophosphate
- Xanthurenate
- Xylitol
- Xylose

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