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| Pathway | Metabolites altered in hyper-glutamatergic patients | Metabolites altered in hypoglutamatergic patients |
| ABC transporters | Leucine  Glycerol  4-Hydroxyproline  Phenylalanine  Mannose  d-Sorbitol  myo-Inositol | Urea  4-Hydroxyproline  Phenylalanine  Mannose  d-Sorbitol |
| Galactose metabolism | Galactose  d-Galactitol  Glycerol  Mannose  d-Sorbitol  myo-Inositol | Mannose  d-Sorbitol  d-Galactitol |
| Tryptophan metabolism | Kynurenine  3-Hydroxyanthranilic acid  5-Hydroxyindole-3-acetic acid  Kynurenic acid | Kynurenine  5-Hydroxyindole-3-acetic acid  Kynurenic acid |
| Amino sugar and nucleotide sugar metabolism | d-Fructose  Mannose  Galactose | Mannose |
| Ascorbate and alderate metabolism | myo-Inositol  a-ketoglutaric acid  Saccharic acid | a-ketoglutaric acid |
| D-Amino acid metabolism | a-ketoglutaric acid  4-Hydroxyproline  Phenylalanine | a-ketoglutaric acid  4-Hydroxyproline  Phenylalanine |
| Glyoxylate and dicarboxylate metabolism | a-ketoglutaric acid | Glyceric acid  Malic acid  a-ketoglutaric acid |