



"Live Better thru Science"

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Applied Metabonomics, a novel way to urinary metabolic evaluation

Metabonomics is the study of outside effects on tissue and biological fluids. By selecting and studying changes in these fluids utilizing **Metabonomics** one can offer fresh insight into the effects of disease, diet, over and under supplementation, prescription medications and street drugs. By applying this discipline to specific human studies, Sabre Sciences has limited the scope of the study to pertinent urinary metabolic pathways, salivary glucocorticoid circadian rhythms and the effect on the hypothalamus/pituitary/adrenal (HPA) Axis.

The ability to conduct **Metabonomic** studies depends on the application of advanced analytical techniques including a metabolite profiling mass spectrometry and statistical analysis. Sabre Sciences has developed a core research facility for HPLC/Mass Spectrometry (LC/MS/MS) to support **Metabonomic** studies. ELISA and ISE capabilities allow for additional salivary analysis and complete Sabre's analytical spectrum.

Sabre Sciences is using the **Metabonomic Model** in studying a limited number of pathways demonstrated in a 10AM urine collection. Mathematic modeling of changes in the levels of the catecholaminergic, serotonergic, glutamatergic, histidine and transmethylation pathways and their ratios helps further define and identify cofactor deficiencies, leading to **targeted supplementation™**.

Simultaneous performance of salivary adrenal cortex (glucocorticoids) studies, salivary electrolyte (mineral corticoids) studies combines the adrenal cortex and adrenal medulla (catecholaminergic) supplying the perfect recipe for an individual (applied) Metabonomic Study.

The **Metabonomic Model** requires studying and evaluating the pathways. By studying the pathways one can determine the body's metabolic capabilities. That is, one can see pre-cursor amino acids, what their values are and how they move down their particular pathway and proceed to completion (the metabolite produced). Simply looking at a particular metabolite tells you nothing. Urinary metabolites, by themselves, are not suggestive of brain neurotransmitter levels. These metabolites are produced by the kidneys (norepinephrine [NE], epinephrine [E]) or in the gut (serotonin). But by examining the pathways one can determine (1) what the body has available in amino acids and vitamin co-factors and (2) then determine, step by step, the individual amino acid's metabolism and clearance. Vitamin deficiencies, transmethylation capabilities, COMT, MAO enzyme activity are there for evaluation. 30 % of the population are undermethylators. By looking at NE to E ratios one can conclude whether there is sufficient SAME (the master methyl donor) production or whether there is excessive methyl donor supplementation causing an exogenous over-methylated state. This is true science which supports **targeted supplementation™**.

Sabre Sciences offers the best in1quality and effective supplements that will improve your quality of life. Our motto, "Live Better thru Science", emphasizes our philosophy. We welcome the opportunity and challenges ahead.