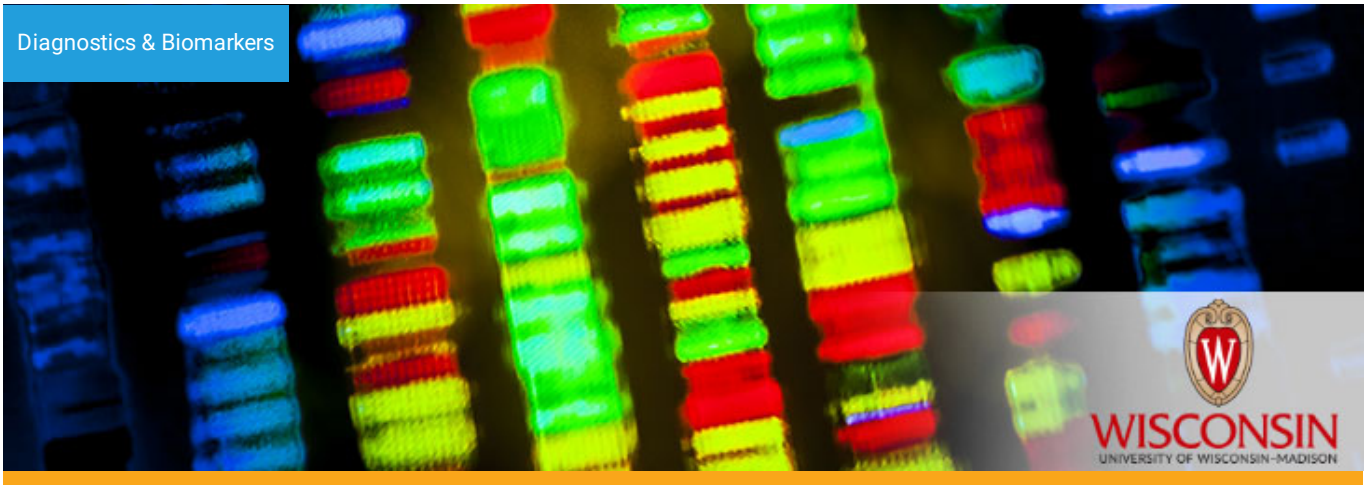

Application of NADH Cytochrome B5 Reductase/System for Direct Metabolism of Xenobiotics

WARF: P02388US

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing methods of measuring differences in the activity or expression of the NADH cytochrome b5 reductase system to analyze drug toxicity and possibly carcinogenesis.

Overview

The NADH cytochrome b5 reductase/cytochrome b5 system can transfer electrons to other enzymes, including those involved in the metabolism of fatty acids, toxins and drugs. In the past, NADH cytochrome b5 reductase has been considered a “helper” enzyme, with no direct role in drug metabolism.

The Invention

UW-Madison researchers have now shown that NADH cytochrome b5 reductase, along with cytochrome b5, can directly metabolize a hydroxylamine drug metabolite that may be important in sulfonamide drug hypersensitivity. Thus, NADH cytochrome b5 reductase and cytochrome b5 play a direct role in drug detoxification. Since many compounds generate hydroxylamine metabolites, including AIDS drugs and some carcinogens, differences in the activity or expression of the NADH cytochrome b5 reductase system may be important in drug toxicity and possibly carcinogenesis.

Applications

- Drug development
- Screening of patients for tolerance to certain drugs or susceptibility to carcinogens

Key Benefits

- May allow screening of patients for tolerance to sulfonamides and other drugs used to treat AIDS patients
- May be useful to reduce adverse reactions to sulfonamides, including the adverse reactions experienced by 50 to 80 percent of AIDS patients treated with such drugs
- May enable development of drugs that do not require NADH cytochrome b5 reductase metabolism
- May be useful to identify individuals likely to be susceptible to certain carcinogens

Tech Fields

- Diagnostics & Biomarkers : Diagnostics

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854