

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

Published date: March 14, 2017

## Technology description

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. 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. 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.

## Application area

Drug development

Screening of patients for tolerance to certain drugs or susceptibility to carcinogens

## Advantages

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

## Institution

[Wisconsin Alumni Research Foundation](#)

## Inventors

[Jackie Lynn Miller](#)

[Joseph Raymond Kurian](#)

[Lauren Trepanier](#)

[Sunil Bajad](#)

## 联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com