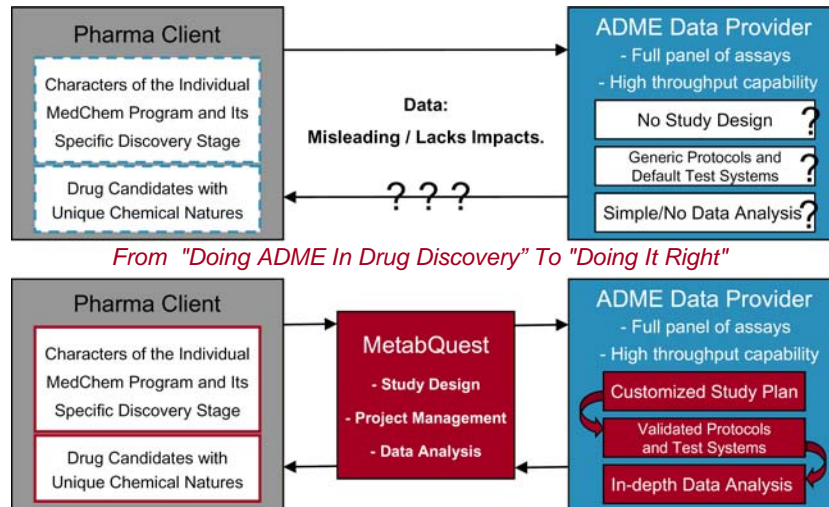




ADME-Tox (Absorption, Disposition, Metabolism, Excretion, and Toxicology) study has become an essential part of drug discovery research, aiming to build the necessary "drug-like" properties into drug candidates with higher successful probabilities in preclinical and clinical studies.

At MetabQuest, we are chemists with our focuses on "Discovery ADME-Tox". We collaborate with R&D divisions of pharma companies and pharma R&D CRO's on:

■ ADME-MedChem outsourcing consulting



From "Doing ADME In Drug Discovery" To "Doing It Right"

■ Metabolite identification (MetID) contract and sub-contract research

Instrumentation Limitation: triple quadrupole mass specs

- best at quantitative analysis (high throughput assays);
- only 1 degree of fragmentation (ms2, ms3 the most);
- low resolution mass (e.g. [M+H]⁺observed=473.17);
- no complimentary structure ID techniques.

Expertise Limitation: non-chemistry personnel

- limited training on biotransformation and structural elucidation;
- limited experience on regular and reactive metabolite ID;
- often provide only mass spectra; structure ID relies on software.

Instrumentation Advantages: state-of-art ion trap mass specs

- best at qualitative analysis (structural elucidation);
- multiple degrees of fragmentation (ms2-ms10);
- high resolution mass (e.g. [M+H]⁺observed=473.1060, +2 ppm);
- wide range of complimentary techniques.

Expertise Advantages: organic/medicinal chemistry Ph.D.'s

- extensive training on biotransformation and structural elucidation;
- over 200 studies have been accomplished;
- full structure ID and biotransformation mechanism elucidation.

Most ADME Assay Data Providers

Slow Turnaround: 2 weeks to 2 months;
Ambiguous Data/Reports; No Chemist-to-chemist Interaction.

High Cost;

MetabQuest

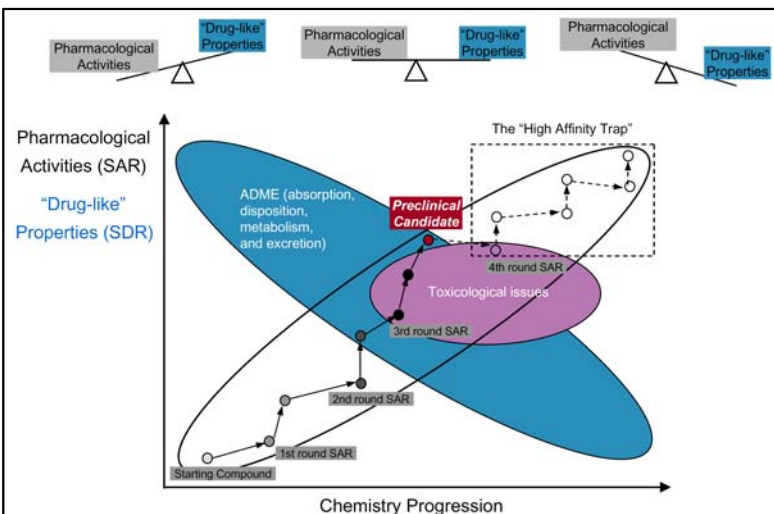
Fast Turnaround: 2-5 days;
Definitive Data/Detailed Reports;

Low Cost;

ADME-MedChem Consulting.

"MetID" Is An In-depth Chemistry Research, Not An Assay with Generic and "Validated" Protocol.

■ Drug discovery methodology research: new drug design and optimization based on early ADME-Tox studies



In-depth structure-druggability (drug-like property) relationship (SDR) studies can accelerate MedChem programs (SAR):

- Dial out soft spot quickly for new drug design;
- Provide chemical modification strategy to minimize reactive/toxic metabolite formation;
- Provide me-better approaches for follow-on programs;
- Identify animal species for tox studies;
- Set up in vitro-in vivo correlation for lead series;
- Track druggabilities along structural progression;
- Address PK-PD discrepancies in animal studies;
- Design and evaluate prodrug approaches; etc.