



Melior Discovery has pioneered an efficient and systematic approach to find new uses for existing drugs and drug candidates. By applying the unique multiplexed *theraTRACE*® indications discovery platform, Melior can quickly evaluate a compound in multiple, high quality *in vivo* models in order to test the molecule's potential use in a variety of therapeutic areas. In response to growing demands, we are now able to offer this same expertise applied to the design and execution of *in vivo* studies utilizing individual efficacy models.

## *theraTRACE*® Platform

Uniquely powerful approach  
to Indications Discovery

- not "hypothesis driven"
- highly predictive *functional* animal models
- "systematic serendipity"
- multiplexing know-how makes this possible

### Sleep/Wake Activity – EEG Recording

- » Validated with known stimulants and somnolent or sedatives
- » Sleep/wake activity evaluated by monitoring brain and muscular electrical activity
- » General locomotor activity and body temperature monitored by telemetry with sleep/wake activity
- » Evaluation of changes in sleep architecture (bout duration, frequency)
- » Cortical EEG changes – delta, theta, gamma, etc bands
- » Circadian rhythm evaluation
- » Drug effects in the presence of sleep deprivation induced by slowly-rotating wheels
- » Determination of sleep rebound ("crash") / hypersomnolence

### Sensory and Motor Evoked Potentials

- » Stimulation of sensory afferents (e.g. sural nerve in hind foot) and recording of sensory evoked potentials in the cortex
- » Auditory or electrical stimulation of brainstem reticulospinal systems to evoke EMG responses (e.g. auditory startle)

### Sensory and Motor Peripheral Nerve Conduction

- » Stimulation of foot, recording from sural nerve
- » Stimulation of tibial nerve, recording from plantaris (foot muscle)

### Evaluation of Spinal Cord Excitability

- » Cutaneous flexor reflex: Stimulation of foot to evoke response in the peroneal muscle
- » Monosynaptic reflex: Stimulation of tibial n. to evoke direct muscle (M) and monosynaptic (H) reflex in plantaris muscle

Melior Discovery  
860 Springdale Drive  
Exton, PA 19341

Phone: (610) 280-0633  
Fax: (610) 280-0637  
Email: [bizdev@meliordiscovery.com](mailto:bizdev@meliordiscovery.com)  
[www.meliordiscovery.com](http://www.meliordiscovery.com)