

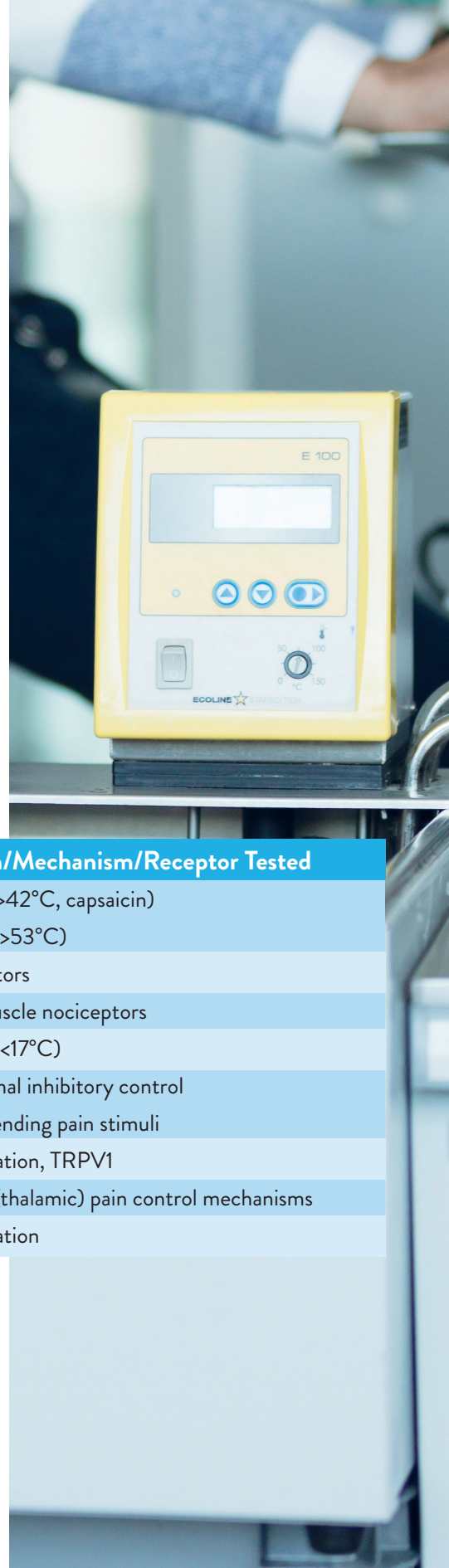
PainCart®

PainCart is a standardised battery of tests designed to measure various types of pain. PainCart can also be used to generate the precise dose-response curve of an analgesic compound.

PainCart at a glance

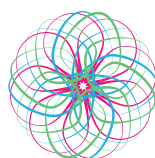
- PainCart uses validated pain models to profile the analgesic effects of new drugs.
- Extremely valuable for obtaining the optimal dose of a new analgesic.
- The tests provide highly reproducible data both in healthy volunteers and in patients.
- The PainCart profile of a new drug can be benchmarked against established profiles of well-known analgesics.
- PainCart can be used to measure both desired effects and adverse effects.

PainCart is an essential tool in the early stages of analgesic drug development. Importantly, PainCart can be used safely in both healthy volunteers and in patients.



Test	Pain Stimulus	Domain/Mechanism/Receptor Tested
Thermal pain	Thermode	TRPV1 (>42°C, capsaicin) TRPV2 (>53°C)
Electrical pain	Transcutaneous electrodes	Nociceptors
Tourniquet pain	Pneumatic pressure	Deep muscle nociceptors
Cold pressor	Cold water bath (1°C)	TRPV3 (<17°C)
Inhibitory conditioned pain modulation	Alternating between the cold pressor test and electrical pain test	Supraspinal inhibitory control over ascending pain stimuli
Capsaicin-induced hyperalgesia	Topical capsaicin and thermode	Inflammation, TRPV1
Thermal grill illusion	Interlaced heat and cold	Central (thalamic) pain control mechanisms
UVB hyperalgesia	UVB irradiation and thermode	Inflammation

TRPV, transient receptor potential vanilloid; UVB, ultraviolet B



CHDR
Centre for Human Drug Research



Why choose CHDR?

The Centre for Human Drug Research specialises in early-phase clinical drug research. CHDR's overall mission is to improve the drug development process by collecting as much information as possible regarding the candidate drug in the early phases of development. This information helps sponsors make informed decisions regarding the course of clinical development for their product.

Research at CHDR covers a wide range of fields, including the central nervous system (CNS) and pain, the cardiovascular system, haemostasis, immunology, and dermatology. In addition, CHDR is at the forefront in developing novel biomarkers and methods for measuring drug-related effects in all of these research areas.

Pharmacology matters

Whether studying a new cognitive-enhancing drug, a next-generation painkiller, or a new monoclonal antibody designed to treat rheumatoid arthritis, the goal is to determine how the compound's effects correlate with both the dose and blood concentration at any given moment. In addition, understanding which biological systems are activated is an essential first step towards quantifying this relationship. At CHDR, our focus on pharmacology is reflected clearly in what we call question-based drug development.

Question-based drug development

CHDR actively uses question-based drug development - or QBD - as a more rational approach to drug development compared to conventional approaches. QBD can be best described as a series of questions that are addressed throughout the process. These questions often seem simple enough, but failing to answer even one question - or even addressing the questions in the wrong order - can have dire consequences. Thus, using this approach can potentially save companies millions of dollars by helping predict a catastrophic issue early in the development process, before the more expensive latter stages (for example, large-scale clinical trials or the marketing phase).

From a general perspective, the most important questions are:

1. Does the biologically active compound and/or active metabolite(s) reach the intended site of action?
2. Does the compound cause its intended pharmacological and/or functional effect(s)?
3. Does the compound cause any unintended pharmacological and/or functional effect(s)?
4. Does the compound have a beneficial effect on the disease and/or clinical pathophysiology?
5. What is the compound's therapeutic window?
6. How does any variability with respect to the drug response in the target population affect the product's development?

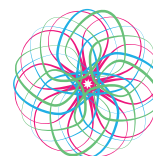
Contact us

Would you like to learn how PainCart can help you quickly obtain accurate, reliable pain data? Or would you like to find out about other services CHDR has to offer?

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