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iTC_{200} is Completely Upgradable to the Auto-iTC_{200}

Auto-iTC_{200}™ System

Complete Automation for Up To 50 Samples Per Day and Up To 384 Samples Unattended

Isothermal Titration Calorimetry (ITC) is the gold standard for measuring biomolecular interactions. ITC simultaneously determines all binding parameters (K, n, ΔH and ΔS) in a single experiment - *information that cannot be obtained from any other method.*

The new MicroCal Auto-iTC_{200} is designed to address the needs of today's life science researchers - particularly those in drug discovery and development. The system combines the performance of MicroCal's ultra-sensitive iTC_{200} with full automation for a complete solution when unattended operation is desired.

Completely automated, all functions are operated through software. The software includes integrated design wizards to assist in selecting experimental run parameters.

A wide range of applications can be accomplished with the Auto-iTC_{200} including: characterization of molecular interactions of small molecules, proteins, antibodies, nucleic acids, lipids and other biomolecules, enzyme kinetics and the effects of molecular structure changes on binding mechanims.

MicroCal instruments are found at major pharmaceutical, biotech, academic and government institutions worldwide.

Why Auto-iTC_{200}?

- Throughput of up to 50 samples per day with a capacity to run 384 samples unattended.
- Unattended operation: All filling, data collection and cell cleaning functions are fully automated.
- Easy to use: Multi-sample data analysis and push-button routines.
- More than just affinities: Simultaneous determination of all binding parameters in a single experiment. Information unattainable from more limited binding assays.
- Application versatility: Investigate any biomolecular interaction with high sensitivity. Experiments require only 200 μl of solution in the sample cell. As little as 5-10 μg of protein can be used.
- True in-solution technique: No buffer restrictions. No immobilization or labeling required. Easily handles turbid solutions.
- Fast time to first result: Requires no assay development or dedicated user to achieve high quality results.
- Complete system: No additional accessories to purchase. No reagents are required.

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Isothermal Titration Calorimetry (ITC) is a technique that directly measures the heat released or absorbed during a binding event. Measurement of this heat enables accurate determination of binding constants (K), reaction stoichiometry (n), enthalpy (ΔH) and entropy (ΔS), thereby providing a complete binding profile in a single experiment. ITC is the method of choice for characterizing biomolecular interactions.

Integrated with a reliable liquid handling and injection system, the Auto-iTC$_{200}$ easily handles up to 50 samples per day with a capacity to run 384 samples unattended. The Auto-iTC$_{200}$ is controlled by an intelligent user interface that assists in experimental design and processes data at the end of sample runs. Data analysis is performed with Origin®, a market-leading data analysis package. Results are presented in an Excel format for further analysis or data transfer.

Auto-iTC$_{200}$ features:

- All filling, injection and cell cleaning functions fully automated and controlled for minimal operator involvement
- Directly measures sub-millimolar to nanomolar binding constants (10^2 to 10^9 M^{-1})
- Measures nanomolar to picomolar binding constants using competitive binding techniques (10^9 to 10^{12} M^{-1})
- Programmable sample recovery
- Non-reactive cells for excellent chemical resistance
- Fixed-in-place cells for reproducible ultrasensitive performance with low maintenance
- Standard 96 and 384 well plate format for higher capacity and loading ease. Can also accept conical vials.
- Three user selectable response times (US Patent #5,967,659) for application versatility
- User-selectable mixing speeds to match sample conditions
- Peltier controlled for rapid temperature equilibration

SPECIFICATIONS

Operating Temperature Range	2°C to 80°C
Cell Design	Coin-shaped, fixed-in-place
Cell Volume	0.2 ml
Sample Space	4 – 96 or 384 well plates 6 – 15 or 50 ml conical vials
Dimensions	58.4 x 53.3 x 73.7 cm 23 x 21 x 29 inches

Full instrument specifications are available upon request.

Ultrasensitive Calorimetry for the Life Sciences™

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