PatchXpress

Automated Parallel Patch-Clamp System

PatchXpress 7000A 全自动平行膜片钳系统

Revolutionizing Ion Channel Drug Discovery!

The PatchXpress 7000A directly records ion channel activity in a true whole-cell patch-clamp screening assay, dramatically improving throughput in comparison to manual methods. When used at full capacity as a screening tool, the PatchXpress can test > 2,000 compounds in an eight-hour day. That is more than two-orders-of-magnitude increase in patch-clamp throughput!

A Fully Featured, Research-Capable Patch-Clamp Workstation

The PatchXpress is both a screening system and a fully-fledged, flexible, basic research electrophysiology workstation. For ion channel screening, there is simply no comparison. Capabilities include optional multidrug or multiconcentration applications on a single cell, with sophisticated stimulation and recording protocols. The fluidics system automatically applies and washes out compounds with exchange rates on the order of 100 ms.

The PatchXpress software monitors the success of each washout—and optionally supports application of a new compound only if the baseline current returns to a user-set threshold. Test compounds are only applied to successfully patch-clamped cells, thereby eliminating compound wastage. With the PatchXpress, you can decide whether to apply many compounds to a single cell or to apply only one compound and use a sequence of detailed voltage protocols.

Seriously Tap into Ion Channel Targets for the First Time

The PatchXpress 7000A opens up a huge pool of highly "druggable" ion channel targets to the drug discovery industry. It is the exclusive *Seal*Chip$_{16}$™ planar electrodes by AVIVA BioSciences, at the heart of the PatchXpress, that give the system its edge. These are backed up by robust, accurate, and highly configurable amplification and fluidics systems.

Whether you need a screening or research tool, high-quality data are absolutely essential. Otherwise, costly false positives and/or negatives will still be a problem. The PatchXpress provides high-quality patch-clamp data—backed by nearly two decades of Axon's experience as the world-leader in electrophysiology hardware and software.

To download a copy of the PatchXpress animation, visit www.patchxpress.com or www.axon.com.

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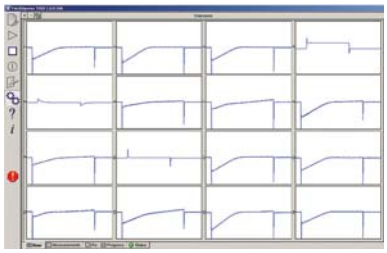
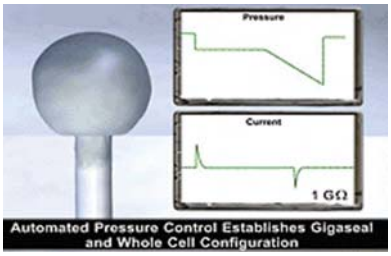
Axon Instruments

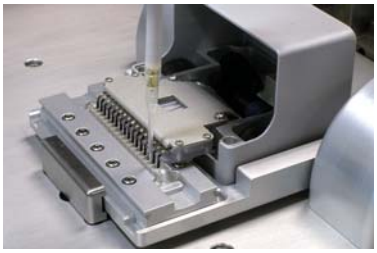
PatchXpress 7000A
Features & Specifications



16 simultaneously and parallel recordings.



Screen shot from PatchXpress animation.



Pipetting robot and wash probes in action.

Automated parallel patch-clamp recording

- Gigaseals (cell-attached resistance > 1 GΩ) to start each recording.
- True whole-cell recordings.
- Low access resistance (Ra) values achieved with 16 independent pressure controllers.
- 16 independent channels recording simultaneously.
- 8 dual-channel, MultiClamp patch-clamp amplifiers (a proven technology).
- High-fidelity 16-channel input/output digitizer, the proven technology used in Axon Instruments' Digidata 1322A.
- Dimensions: 30" deep x 66" tall x 58" wide (plus the 24" monitor attached to the side).

High-performance acquisition and analysis software

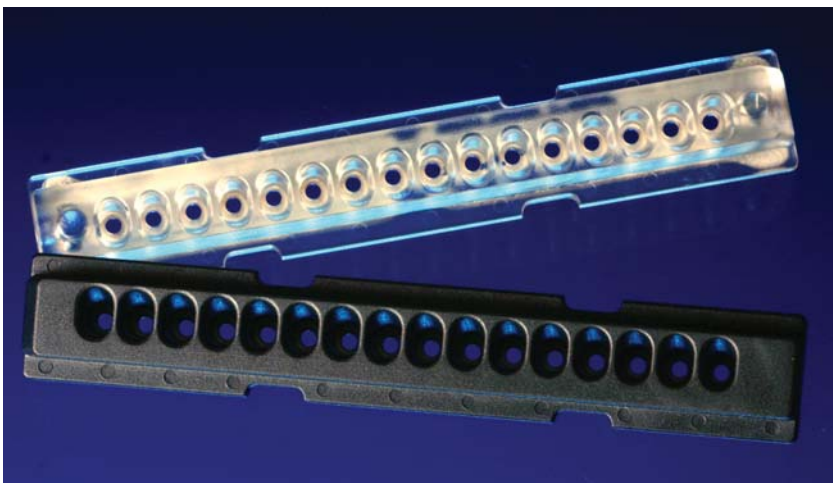
- 16 scope windows for live views of recordings in all 16 channels.
- "Chart-recorder" windows for viewing on-line statistics, such as peak amplitude over time.
- Wide-screen monitor for easy viewing of 16 scope windows and "chart-recorder" windows.
- Optional text file output showing hits based on user criteria.
- Database software (DataXpress) for analysis including quick I-V graphs and quick dose-response curves.

Integrated and intelligent fluidics facilitate drug application during recordings

- Viability testing automatically determines the cells that have achieved whole-cell clamp conditions. Test compounds are added only to viable cells, thereby eliminating waste of precious materials.
- Washout of chamber supported.
- Rapid solution exchange.
- Small volumes of test compounds (~ 50 µl).
- Disposable tips eliminate cross-contamination.
- Cumulative dose-response experiments supported.
- Records from both ligand- and voltage-gated ion channels.

Single-use planar patch-clamp electrode substrate (16-channel)

- Exclusive AVIVA BioSciences planar electrodes with very high whole-cell recording success rate (*Seal*Chip$_{16}$™).
- Planar format for compound addition from above.
- Disposable electrode array for zero cross-contamination.



View of the AVIVA *Seal*Chip$_{16}$™

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