MAQsys

Precision Ion Channel Measurement for Drug Discovery

Maqsys provides direct single-channel readouts to clarify ion channel function and compound effects.

PLANAR LIPID BILAYERS · 16-CHANNEL RECORDING · ORGANELLE TARGETS

WHY DIRECT MEASUREMENT

Read channel function with less ambiguity.

1 Ion channels as established drug targets

Ion channels are key membrane proteins involved in disease-relevant signaling.

2 Limitations of cell-based assays

Endogenous channels and complex cellular context may interfere with interpretation.

3 Access to Organelle channels

ER, mitochondrial, and lysosomal membrane channels remain challenging targets for functional evaluation.

MAQsys ARTIFICIAL CELL MEMBRANE PLATFORM

Reconstitute the target, and measure the current directly.

Target ion channels are reconstituted into planar lipid bilayers and measured directly as single-channel currents.

1 Target-focused measurement
Minimize interference from endogenous channels

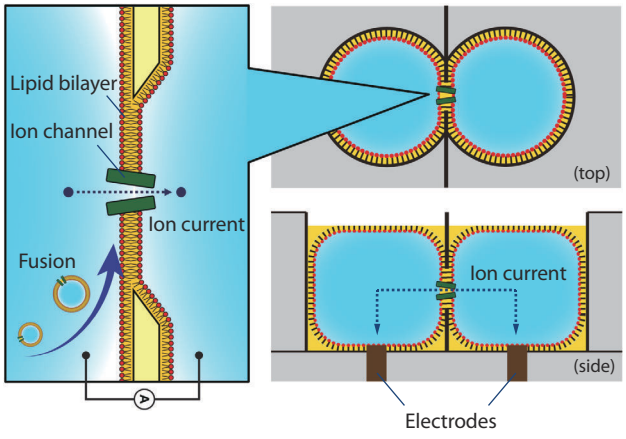
2 Defined membrane environment
Control membrane and assay conditions

3 Direct compound evaluation
Assess effects on channel function

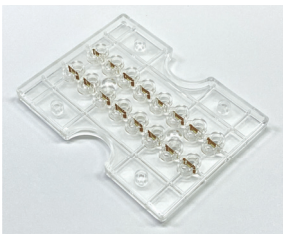
4 Decision-ready data
Support the interpretation and next-step planning

Measurement workflow

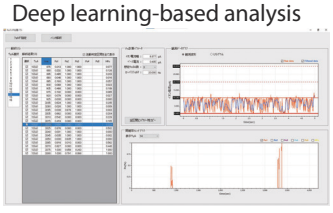
Ion channel reconstitution



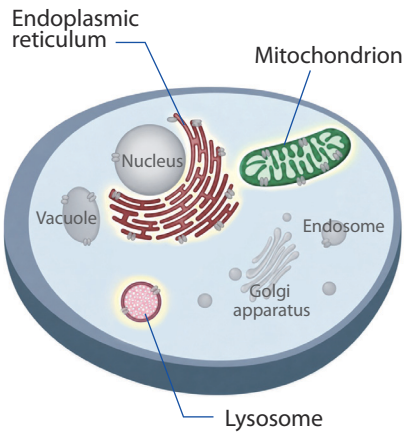
Parallel 16-channel chip



Deep learning-based analysis



Organelle tagets



Single-channel data that supports decisions.

Representative BK and mitochondrial VDAC readouts

READOUT EXAMPLE

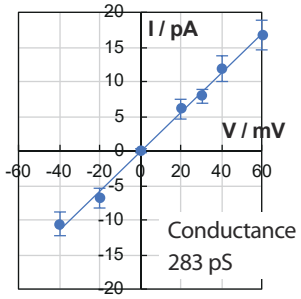
hBK channel

Large-conductance K^+ channel

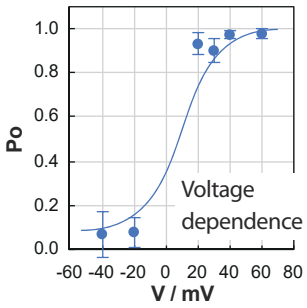
Current trace of a single hBK channel

Applied voltage: 30 mV

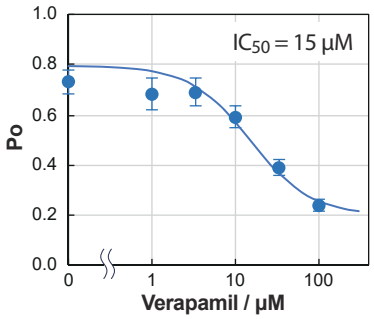
Current vs. voltage plot



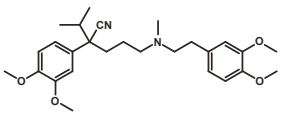
Open probability



Compound effects



Verapamil



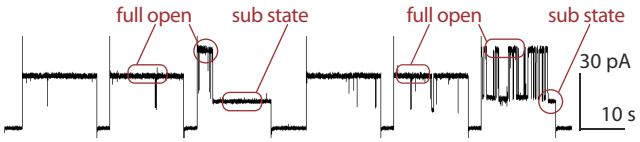
ORGANELLE APPLICATION

hVDAC channels

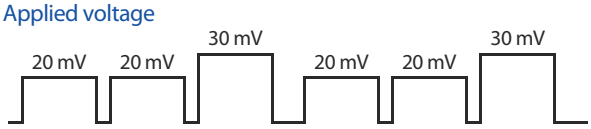
Mitochondrial outer membrane channels

Current trace of a single hVDAC1 channel

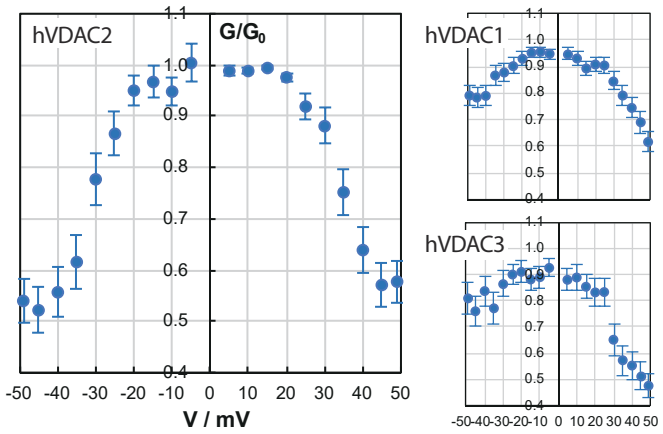
Current signal



Applied voltage



Conductance vs. voltage plots across isoforms



*VDAC2 relevance

A potential "mitochondrial checkpoint" in cancer immunity (Yuan, Nature 2025)

ION CHANNEL & PORE-FORMING PROTEIN SERVICES

From assay planning to data interpretation.

Feasibility consultation	Assay planning & measurement	Functional analysis	Report & discussion

Let's discuss your channel.

- Measurement inquiries
- collaboration
- technical consultation

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