

Product Specification:



QCells

HEK- $\text{Na}_v1.2a$ optimized for the QPatch



- Cells optimized for the QPatch
- Tight sealing properties
- Optimal success rates
- Stable current response
- Cell line support
- Optimized Ringer's solutions
- Custom assay and analysis

See specifications on back

Na_v1.2a is a voltage-gated, Na⁺-selective channel expressed in the central nervous system and encoded by the SCN2A gene in humans. This large glycoprotein is composed of a large alpha subunit with 24 transmembrane domains in combination of one or more regulatory beta subunits. Na_v1.2a channels are responsible for the generation and propagation of action potentials in neurons and muscle cells. Mutations in the SCN2A gene have been linked to several seizure disorders, stroke and pain.

Sophion's unique experience with automated patch clamping and cell culture optimizations means that we can offer QPatch optimized cells, QCells, for your experiments, which guarantees a uniform cell line with a near perfect and stable expression profile. Sophion collaborates with a number of cell line vendors to provide your cell line of choice.

This QCell, HEK-rNav1.2a is now available for purchase directly from Sophion, and was developed and optimized for QPatch experiments.

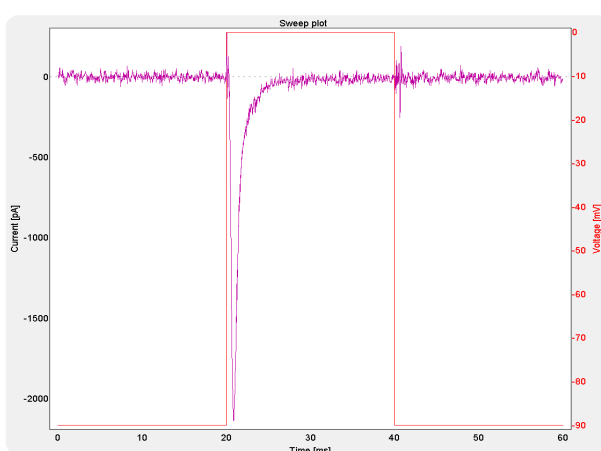


Fig. 1 Leak subtracted current trace of Na_v1.2a

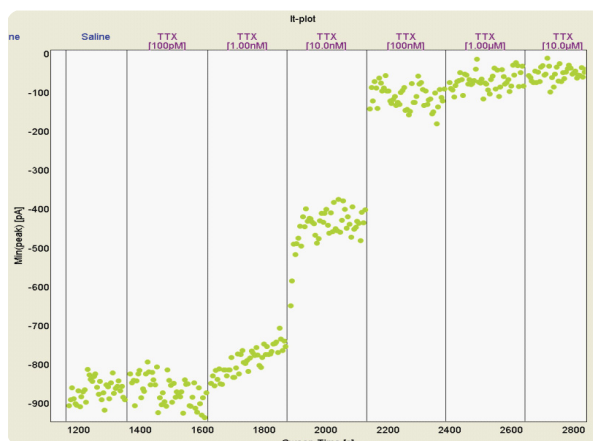


Fig. 2 Current versus time (IT) plot of maximum current amplitude at increasing concentrations of TTX.

QCell properties	Single-hole	Multi-hole
Sites with current (%)	41	94
Average max. current amplitude	-1.4±0.8 nA	-10.9±0.1
TTX IC ₅₀	8.3±0.6 nM	7.6±0.6nM
Voltage of half-maximal inactivation V _{1/2}	-62±2 mV	-55±7 mV
Voltage of half-maximal inactivation	-31±3 mV	-29±6 mV

QPlate success rates	Single-hole	Multi-hole
Cell attachment (%)	96	100
Seal > 100 MΩ (%)	88	n/a
Seal > 1 GΩ (%)	50	n/a
Whole-cells (%)	83	100
Completed experiments (%)	77	100
Representative whole-cell lifetime (min)	35	30