

Nanon NPC-certified cells. The optimum choice for your assays.

PrecisIOn™ hNa_v1.5-HEK

Cells from MERCK Millipore, optimized for Nanion Patch Clamp Devices (NPC) Port-a-Patch, Patchliner and SyncroPatch96.



- Assay optimized for Nanion APCs
- Giga Ohm seals
- High success rates
- Stable current responses
- Cell line and assay support
- Optimized patch clamp solutions

NPC - certified cells

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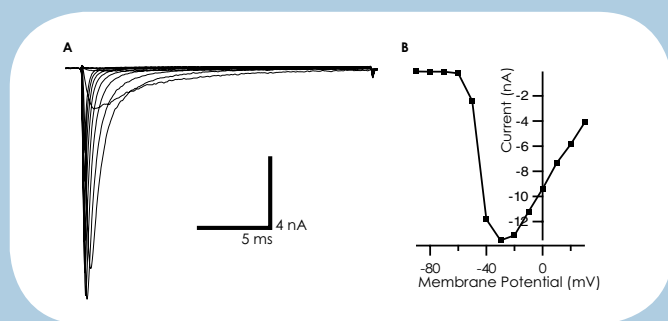
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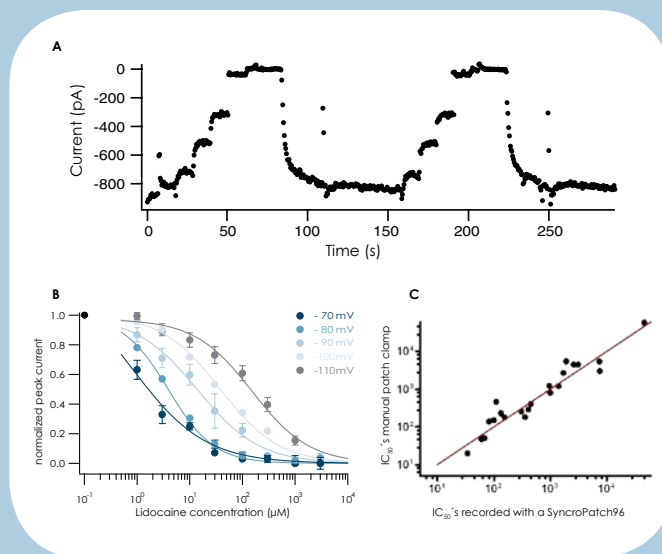
Nanion NPC-certified hNa_v1.5-HEK cells

Voltage gated sodium channels (Na_v) are important elements of action potential initiation and propagation in excitable cells. The channels are activated upon a depolarization of the membrane. Their activation leads to further depolarization of the membrane which constitutes the upstroke of the action potential.

The human SCN5A gene encodes the channel-forming subunit of Na_v1.5. The channels are expressed in the heart and therefore are important safety targets in cardiac risk assessment.



Raw data traces (A) and current-voltage characteristics (B) of hNa_v1.5 currents.



A hNa_v1.5 current plotted against time. Dose dependent block by TTX and washout shows stability of Na_v1.5 currents. Five concentrations of TTX (0.3, 1, 3, 10, 30 μM) were applied, followed by washout with antagonist-free buffer and re-application of the same TTX concentrations and another washout. **B** The IC₅₀ of lidocaine depends on the holding potential. Average IC₅₀s of 1.7 μM (-70 mV), 4.0 μM (-80 mV), 21.7 μM (-90 mV), 37.8 μM (-100 mV), and 194.6 μM (-110 mV) were obtained. **C** 22 selected compounds were tested in a blind study on the SyncroPatch96. The IC₅₀-values were similar to values obtained by manual patch clamping, performed at a customer site.

hNa_v1.5-HEK from MERCK Millipore

Passage stability:	> 30
Current amplitude / cell:	2.5 ± 0.4 nA (n=16)
IC₅₀s:	TTX, IC ₅₀ =1.5 nM (n=34); Lidocaine IC ₅₀ =4 μM (-80 mV); further 22 compounds in a blind study gave expected literature values
Seal resistance:	1.3 ± 0.7 GΩ
C_{slow}:	7.0 ± 1 pF (n=16)
R_s:	7.5 ± 1 (n=16)
Cell stability after harvesting:	~ 5 hrs
Average whole cell stability:	~ 50 min
Successful whole cell recordings:	70 - 90 %
Application directly from frozen stock:	yes

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