



Fluoride-free SyncroPatch 384

High-throughput APC without seal enhancers

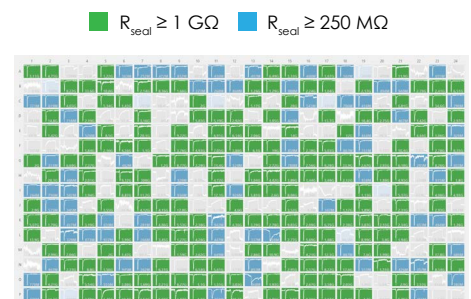
Fluoride has been used in the internal recording solution for manual and automated patch clamp (APC) experiments for decades. In conjunction with transiently elevated Ca^{2+} levels, fluoride helps improve the seal resistance and promotes longer lasting recordings. However, internal fluoride can affect the voltage-dependence of activation and inactivation, as well as influence internal second messenger systems. Therefore, it is desirable to have the option to perform experiments using a physiological, fluoride-free internal solution.

Nanion's SyncroPatch 384 now enables you to conduct high-throughput fluoride-free recordings in physiological solutions, with no external elevated Ca^{2+} needed. We have developed special NPC-384FF chips that allow fluoride-free recordings on a 384-well based automated patch clamp system, with success rates exceeding 40% for $G\Omega$ seals.

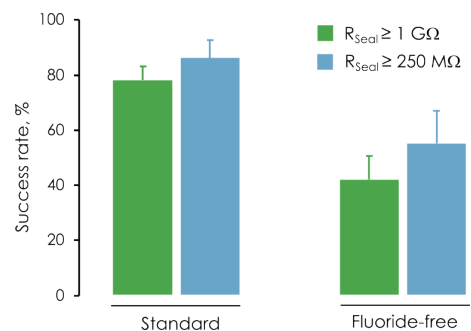


Contact us today

Fluoride-free recordings from CHO-Nav1.5 cells



Success rates using standard internal and fluoride-free solution



SyncroPatch 384

Reliable fluoride-free recordings

High quality, high throughput, fluoride-free!

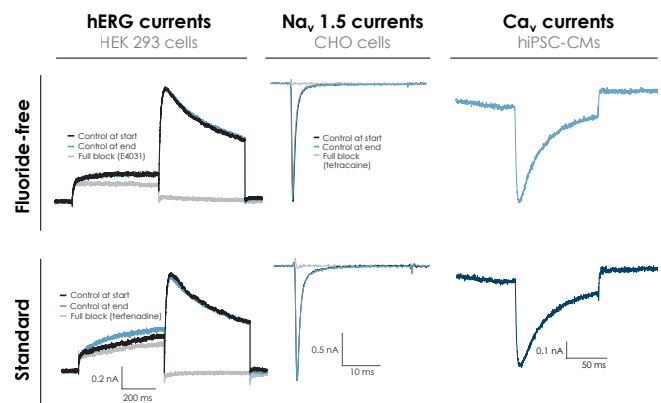
- Key quality control parameters comparable to standard conditions.
- Gigaseals in physiological solutions, no external elevated Ca^{2+} needed.
- Success rates exceed 40% for $\text{G}\Omega$ seals.
- Stable long-lasting recordings (> 20 min).
- Suitable for standard cell lines, iPSCs and primary cells.

	HEK - hERG		CHO - Nav1.5	
	Standard	Fluoride-free	Standard	Fluoride-free
R_{seal} (G Ω)	2.23	1.36	1.89	1.39
Capacitance (pF)	16.2	15.9	13.9	13.8
R_{series} (M Ω)	8.6	10.2	7.6	9.8
Rundown (%/min)	0.1	0.07	0.5	0.4

Reliable recordings without seal enhancers

The SyncroPatch 384 now allows you to perform high-throughput recordings in physiological solutions, completely free from fluoride¹. This approach is not limited to standard cell lines and could be adopted for a wide range of cell types and ion currents to bring conditions for high throughput APC closer to manual patch clamp recordings.

¹ Rapedius M, et al. There is no F in APC: Using physiological fluoride-free solutions for high throughput automated patch clamp experiments. *Front Mol Neurosci.* 2022 Aug 22;15:982316. doi: 10.3389/fnmol.2022.982316. PMID: 36072300; PMCID: PMC9443850.



Dedicated NPC-384FF planar patch clamp chips now available

- Specially designed to support fluoride-free recordings
- Each NPC-384FF chip contains 384 recording chambers with borosilicate glass bottom.
- Single- and four-hole chips with low, medium, or high resistance are available.
- External solution exchange and internal solution perfusion during recording.
- Whole-cell and perforated patch recordings possible.

