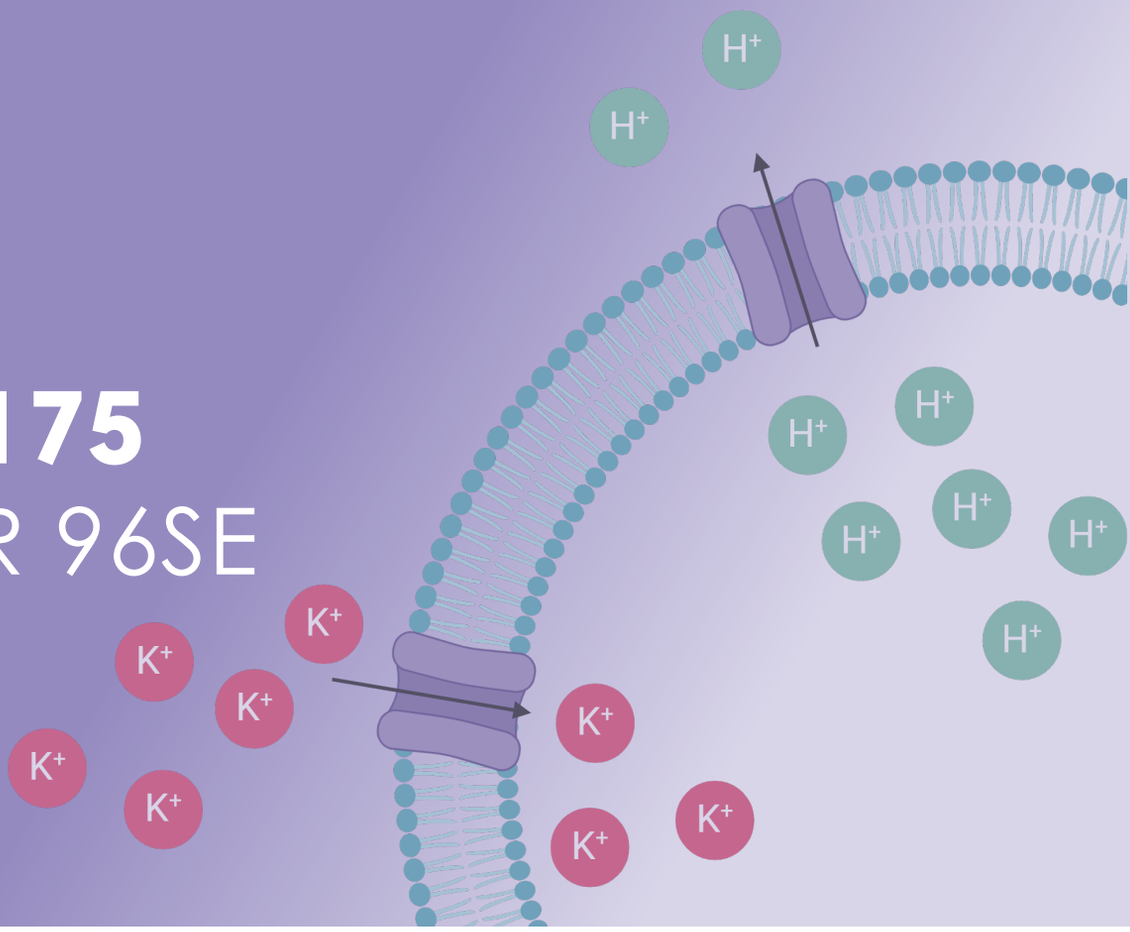
TMEM175
SURFE²R 96SE



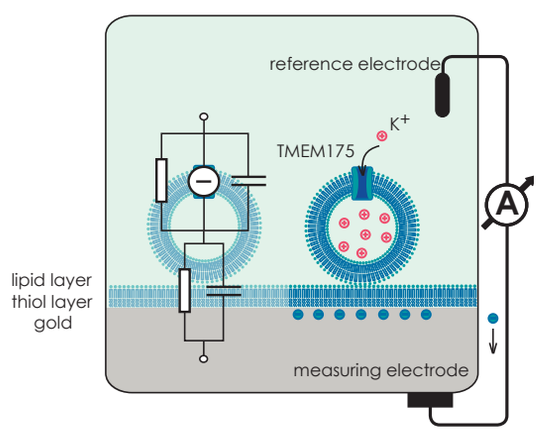
Investigating TMEM175 with the SURFE²R 96SE

TMEM175 is a lysosomal cation channel that regulates lysosomal pH, membrane potential, and autophagy. Initially identified as a potassium leak channel, recent findings indicate that it also facilitates proton transport.

TMEM175 has attracted interest due to its potential role in neurodegenerative diseases like Parkinson's and Lewy Body Dementia. Understanding its pharmacological significance and developing assays to screen compounds affecting TMEM175 could lead to new treatments for these and other neurodegenerative diseases.

Solid supported membrane-based electrophysiology (SSME) offers distinct advantages for studying TMEM175. SSME recordings reveal ionic currents through capacitive charging of the sample membrane, accessing intracellular targets like TMEM175 in lysosomes, without relying on live cells. Since SSME employs specific ion concentration jumps, TMEM175's proton and potassium currents can be investigated separately. The large surface area of SSME sensors and cumulative measurement of millions of vesicles enhance the signal-to-noise ratio, facilitating membrane transporter measurements.

Nanion's SURFE²R 96SE enables high-throughput biophysical and pharmacological studies of TMEM175, offering a robust platform for advancing neurodegenerative disease research.



Contact us today!

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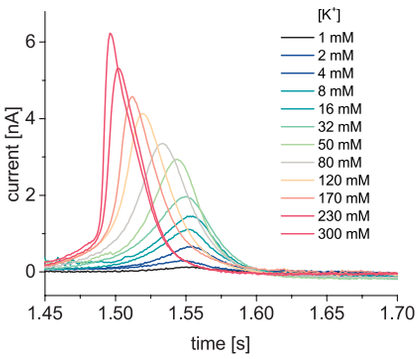
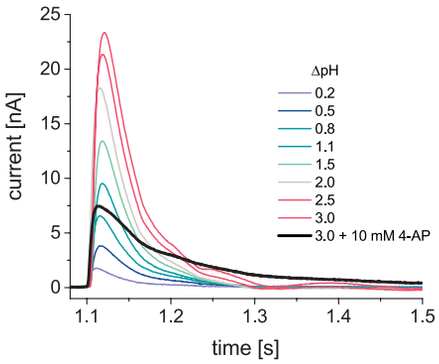
SURFE²R 96SE

Automated Transporter Screening



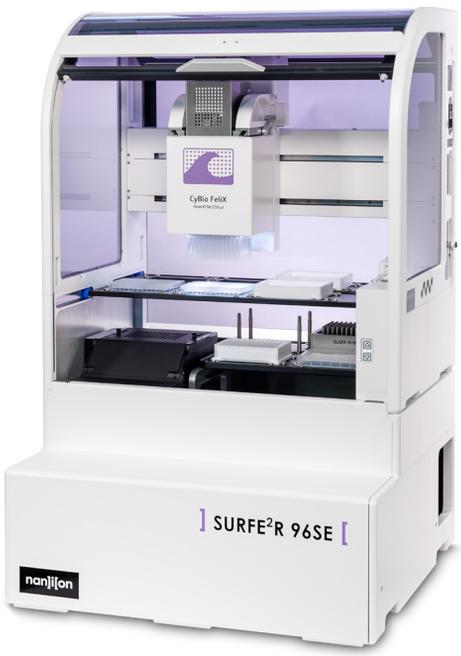
Currents for K⁺ flux through TMEM175

Representative current traces induced by K⁺ concentration jumps on lysosomes overexpressing TMEM175.



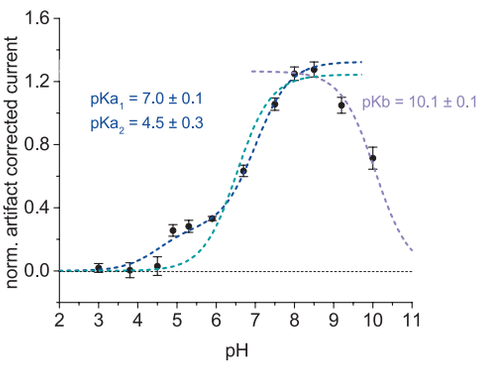
Currents for H⁺ flux through TMEM175

Representative current traces induced by pH jumps on lysosomes overexpressing TMEM175. *Data recorded with SURFE²R N1



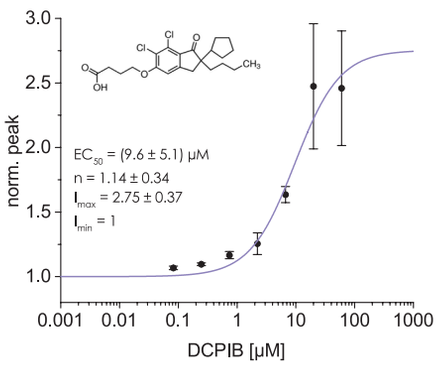
Effects of intra-lysosomal and cytosolic pH on K⁺ flux

Normalized peak currents of K⁺ flux at a given pH, solely driven by K⁺ concentration gradient.



Effect of DCPIB on the K⁺ flux through TMEM175

DCPIB has been described as an enhancer of H⁺ and K⁺ conductivity of TMEM175.



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