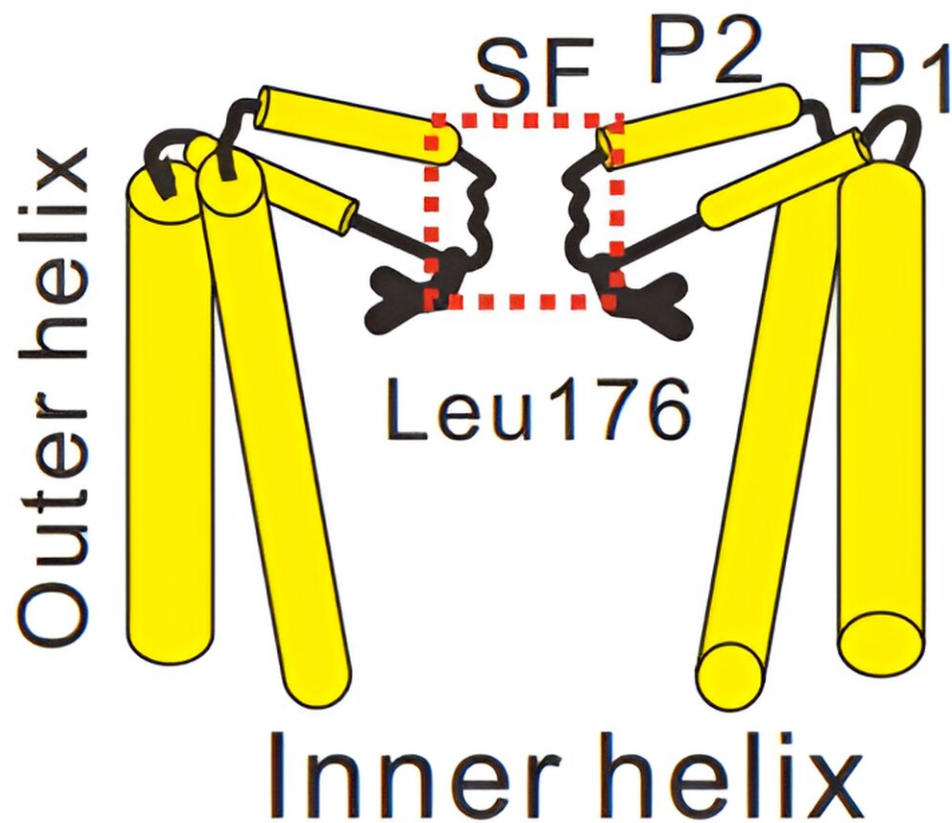


Researchers show how calcium ions can block sodium ion channels in cell membranes

August 9 2023



Schematic diagram of the pore domain of tetrameric cation channel. The front and rear subunits of the transmembrane part were removed for clarity. The pore domain contains two transmembrane helices (outer and inner helix). The Red dashed square indicates the selectivity filter (SF) at the center of the pore domain. A black line depicts the position of Leu176 of NavAb. Credit: *Nature*

Ion channels are structures within cell membranes that enable specific ions to travel to and from the cell. Such transfer is essential for a variety of physiological processes such as muscle cell contraction and nerve excitation. In so-called tetrameric cation channels, the ion selectivity results from the unique structural and chemical environment of the part referred to as the selectivity filter, which is located between two intertwined helical structures.

Tetrameric [ion channels](#) are prone to "divalent cation block," the blocking of the [channel](#) by ions such as calcium (Ca

Citation: Researchers show how calcium ions can block sodium ion channels in cell membranes (2023, August 9) retrieved 4 October 2025 from <https://phys.org/news/2023-08-calcium-ions-block-sodium-ion.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--