Key signaling protein identified as possible target for new therapies in hard-to-treat cancers

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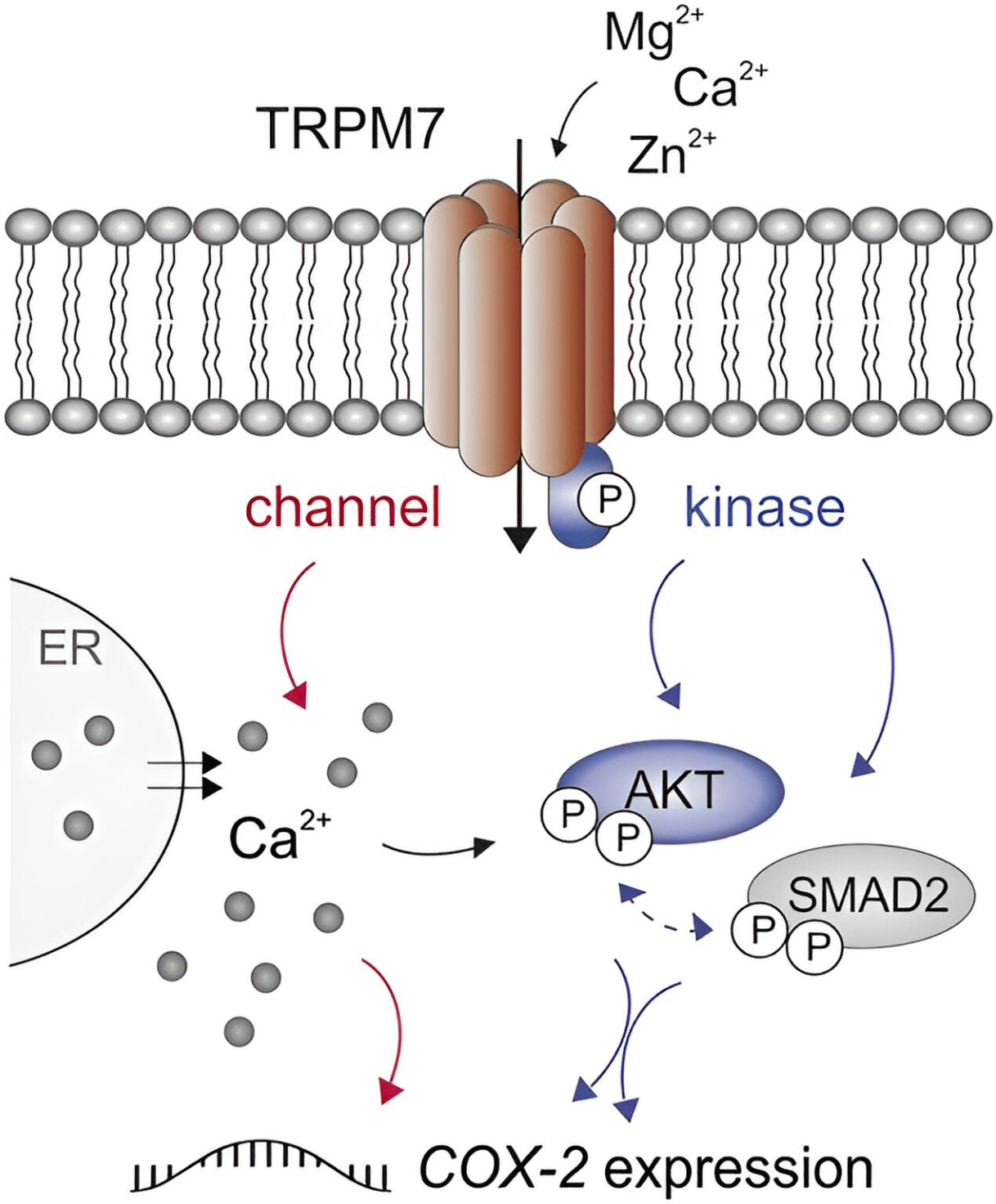

Credit: *Function* (2023). DOI: 10.1093/function/zqad053

The unique signaling protein known as TRPM7 can stimulate and interact with an important cellular signaling hub called the AKT machinery, which is a well-known component of multiple cellular functions that drive growth and proliferation. This interaction causes a significant increase in the gene expression of COX-2, an important pro-inflammatory and pro-tumorigenic gene that is highly expressed in cancer cells and typically coincides with poor prognosis.

These findings confirm long-held theories in the physiology community about AKT and TRPM7 interconnectivity in various cell types. This discovery, made by researchers from the Institute of Pharmacology at Johannes Kepler University in Linz, Austria and the Walther Straub Institute of Pharmacology and Toxicology at Ludwig Maximilian University in Munich, Germany, is published in the journal *Function*.

At the beginning of the study, researchers were investigating possible TRPM7-dependent pathways in leukemia cells. Chronic myeloid leukemia is a type of cancer that is known to build resistance to treatment. The findings of this study are important because TRPM7 is a potential target in chronic myeloid leukemia and other hard-to-treat cancers for possible new (co-)therapies.

More information: Birgit Hoeger et al, Inactivation of TRPM7 Kinase Targets AKT Signaling and Cyclooxygenase-2 Expression in Human CML Cells, *Function* (2023). DOI: 10.1093/function/zqad053

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