

Cite this as: Yi LIU, Fuqin DUAN, Runpeng LIN, Subinuer SHABUERJIANG, Fan YANG, Aerziguli AIERKEN, 2026. TRPV1: from structure to function—a multidimensional target for therapeutic advances. *Journal of Zhejiang University-SCIENCE B*, 27(1):1-22.
<https://doi.org/10.1631/jzus.B2500209>

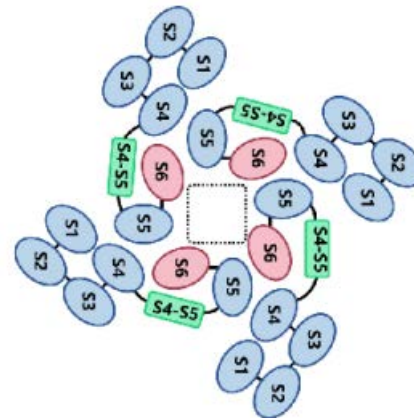
TRPV1: from structure to function—a multidimensional target for therapeutic advances

Key words: Transient receptor potential vanilloid subtype 1 (TRPV1); Structure; Gating mechanism; Therapeutic target

Research Summary

This review synthesizes current knowledge on the structure, gating mechanisms, and physiological and pathological roles of TRPV1, highlighting its potential as a therapeutic target across multiple disease states.

- **Structural features of TRPV1**
- **Gating mechanisms of TRPV1**
- **TRPV1 in diseases and therapeutics**



Innovation points

- **Introduction** of the complex structure of TRPV1 and its diverse gating mechanisms, elucidating how these features enable it to respond to various stimuli and play crucial roles in physiological and pathological processes.

- **Summary** of the most recent research advancements on TRPV1 in physiological homeostasis and disease pathogenesis.

- **Emphasis** on the way for novel targeted therapies and precision medicine approaches.

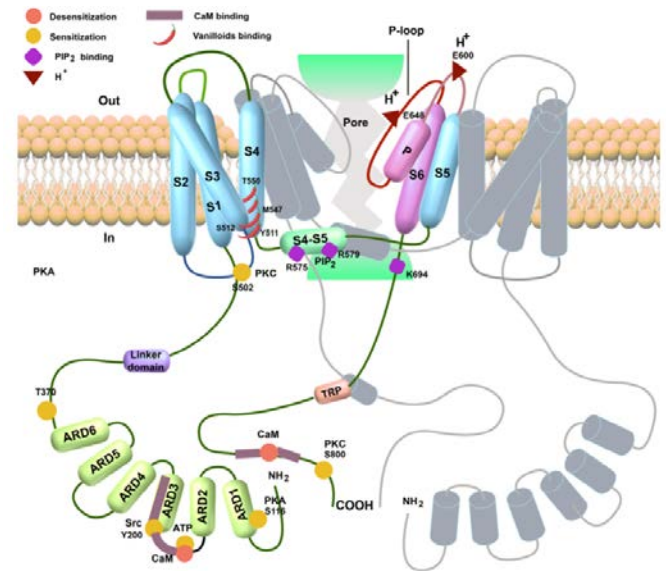
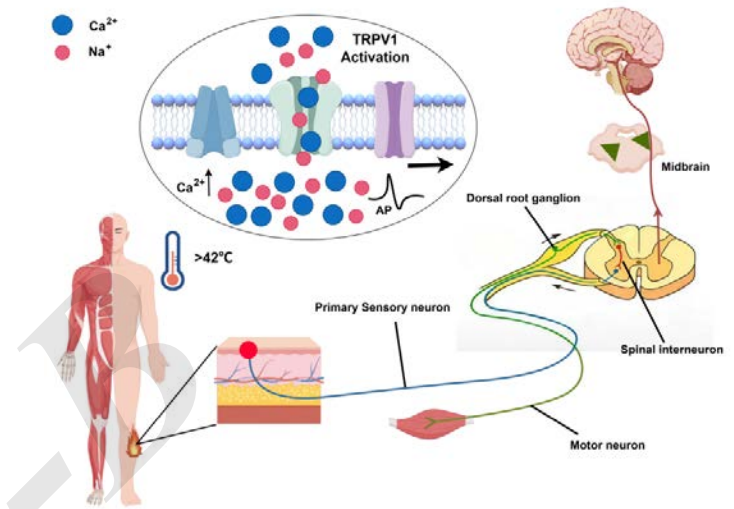


Figure 4