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Data Sheet

Nav1.8 – HEK 293Cell line

Catalog #: 60508

Background

Nav1.8 is a voltage gated type X, alpha subunit sodium channel which in humans is encoded by the SCN10A gene. This subtype of voltage-gated sodium channel is expressed in nociceptors and has been proposed as a target for the development of new analgesics [1]. Mice deficient in Nav1.8 had deficits in sensing inflammatory pain (initiated by tissue damage/inflammation) and visceral pain (initiated by damage or injury to internal organs) but not neuropathic pain.

Description

Nav1.8 (Genbank # Q9Y5Y9) is a tetrodotoxin-resistant sodium channel isoform. Its electrophysiological properties vary depending on the type of the associated beta subunits (in vitro) [2].

Sequence

A synthetic codon-optimized DNA sequence encoding human Nav1.8 protein [3] with C-terminal Streptavidin-Binding Peptide (SBP) [4] tag is stably integrated in 293HEK-Trex cells.

Application

- *Drug compound screening*
- *Functional assays*
- *Efficient antigen for mouse immunization*

Format

1 vial (2 x 10⁶) frozen cells

Each vial contains 2 X 10⁶ cells in 1 ml of Sigma Freezing Medium (Cat. # C-6164)

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Host cell

293HEK Trex

Recommended Storage

Immediately upon receipt, store in liquid nitrogen.

Propagation Medium

DMEM/F12 50/50, 10% FBS, 1% Penicillin Streptomycin, 10 μ g/ml Blasticidin, 0.2 mg/ml Zeocin.

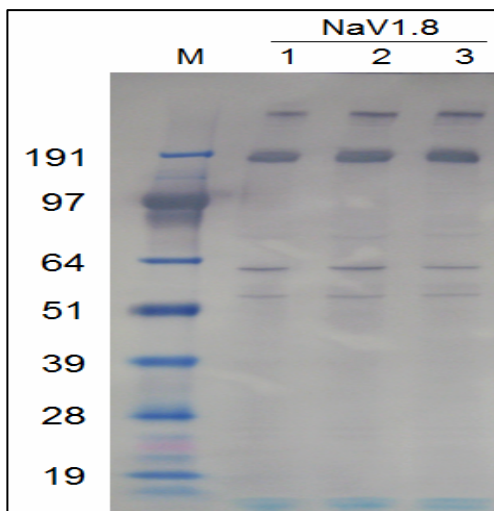
Induction of the target protein expression

DMEM/F12 50/50, 10% FBS, 1% Penicillin Streptomycin, 1 μ g/ml Doxycycline (Biochemika #44577) and 3 mM Na-butyrate (Acros Organics #263190250) during 20-24 hrs. before cell harvesting.

Stability

Stable after minimum of seven continuous passages. Upon receipt, amplify the cells in culture and make several frozen aliquots for future use.

Figure 1. Western Blot of the NaV1.8 expressing cells. M: molecular weight marker; 1-3: NaV1.8-SBP fusion; detection via Streptavidin-AP.



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Figure 2. Cells expression profile

Figure 2a

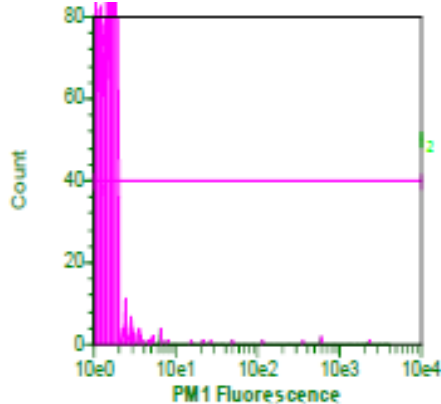
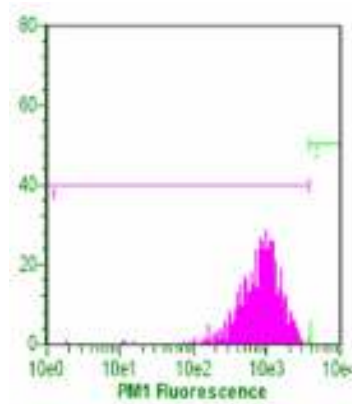


Figure 2b



NaV1.8 expression on cell surface measured by flow cytometry (FACS) using intracellular cells staining by Streptavidin-PE.

Figure 2a: Host cells, Figure 2b: NaV1.8 expressing cells

References:

1. Catterall, W.A. et al. *Pharmacol. Rev.* **57** (4): 397–409 (2005).
2. Cummins, T.R., et al. *Pain* **131** (3): 243–257 (2007).
3. Muzny, D.M., et al. *Nature* **440**:1194-1198 (2006).
4. Wilson, D.S., et al. *Protein Expression and Purification* **23** (3): 440–446 (2001).

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