



Common Variants of the Sodium Channel Alpha Subunits

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WARF: P02284US

Inventors: Jonathan Makielski, Bin Ye, Michael Ackerman

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing four groups of SCN5A variants that represent the most common SCN5A variants in humans.

Overview

The *SCN5A* gene encodes a human cardiac sodium (Na⁺) channel alpha subunit that carries the inward Na⁺ current in the heart. Three distinct polymorphic *SCN5A* clones, hH1, hH1a and hH1b, have been isolated from human cardiac cDNA libraries.

The Invention

UW-Madison researchers have identified four groups of *SCN5A* variants that represent the most common *SCN5A* variants in humans. The researchers found that none of the three previously known *SCN5A* clones represented a common sequence for *SCN5A*. The new *SCN5A* variants, on the other hand, have been observed in hundreds of individuals. Thus, they provide the true reference or background sequences for evaluating the normal functions of the sodium channel. They are also the true reference sequences against which the effects of various *SCN5A* mutations should be judged.

The researchers have put the four full constructs into appropriate expression vectors. They also have created mammalian cell lines that stably express each of the channels.

Applications

- Provides new tools to study *SCN5A* mutations
- Useful to identify new diagnostic and treatment strategies for sodium channel-related diseases
- May be useful for screening agents that modulate sodium channel activities

Key Benefits

- These *SCN5A* sequences are common in the human population.
- Information on the *SCN5A* background of an individual patient may be important for diagnostic and therapeutic purposes.
- Provides a relevant *SCN5A* background for the study and testing of disease-causing mutations
- Provides a relevant *SCN5A* background for use in drug screening
- Recombinant DNA techniques can be used to make any desired change in the channel.
- Cell lines allow direct study of the channel protein without the trouble and expense of transient transfections.

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For More Information About the Invention

- [Jonathan Makielski](#)

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WARF
Wisconsin Alumni Research Foundation

| info@warf.org | 608.960.9850

Tech Fields

- [Drug Discovery & Development : Other drug discovery & development](#)
- [Drug Discovery & Development : Preclinical testing](#)
- [Research Tools : Cell lines](#)

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