Drug Discovery & Development

Cell Line Stably Expressing *KvLQT1* and *minK*

WARF: P03073US

Inventors: Craig January, Sridharan Rajamani, Corey Anderson

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an HEK 293 cell line that stably expresses *KvLQT1* and *mink*.

Overview

One of the key potassium channels in the heart is formed by the co-assembly of protein products from the *KvLQT1 (KCNQ1)* and *minK (KCNE1)* genes, which produce the slowly activating delayed rectifier potassium current (I_{Ks}). Abnormalities in either of these genes can cause long QT syndrome, a disorder associated with delayed cardiac repolarization, prolonged electrocardiographic QT intervals, and the development of ventricular arrhythmias and sudden death.

The Invention

UW-Madison researchers have developed an HEK 293 cell line that stably expresses *KvLQT1* and *minK*. Since unintended block of potassium channel activity by drugs can cause an acquired form of long QT syndrome, which leads to potentially fatal arrhythmias, this system provides an important screening tool for drugs in development.

Applications

- Testing lead compounds and drugs for their potential to block activity of the KvLQT1-minK cardiac potassium channel

Key Benefits

- The HEK 293 cell line is stable, providing a constant source of material.
- Cells are of human lineage and can be studied at room or body temperature, providing the highest stringency assay.

Additional Information

For More Information About the Inventors

- Craig January

Tech Fields

- Drug Discovery & Development : Preclinical testing
- Research Tools : Cell lines

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854