

HERG (N-20): sc-15966

BACKGROUND

Human ether-a-go-go related gene (HERG) encodes the pore-forming α subunit of the delayed rectifier potassium channel IKr. The HERG subunit contains six transmembrane α -helices with a reentrant "pore-loop" between the fifth and the sixth transmembrane helices. The two N-terminal splice variants of HERG include the full-length isoform 1 α and the shorter isoform 1 β . Isoform 1 β lacks the PAS motif and deactivates at a faster rate than isoform 1 α . Residues within the C-terminal play a role in channel expression and channel gating, including voltage-dependent activation. HERG is expressed in the heart and is more abundantly expressed in the ventricles than in the atria. Mutations in the gene encoding HERG increase beat-to-beat variability and early after depolarization. These fluctuations facilitate the genesis and propagation of premature heartbeats associated with inheritable long QT syndrome.

REFERENCES

1. Heginbotham, L., et al. 1994. Mutations in the K⁺ channel signature sequence. *Biophys. J.* 66: 1061-1067.
2. Curran, M.E., et al. 1995. A molecular basis for cardiac arrhythmia: HERG mutations cause long QT syndrome. *Cell* 80: 795-803.
3. Sanguinetti, M.C., et al. 1995. A mechanistic link between an inherited and an acquired cardiac arrhythmia: HERG encodes the IKr potassium channel. *Cell* 81: 299-307.
4. Lees-Miller, J.P., et al. 1997. Electrophysiological characterization of an alternatively processed ERG K⁺ channel in mouse and human hearts. *Circ. Res.* 81: 719-726.
5. Doyle, D.A., et al. 1998. The structure of the potassium channel: molecular basis of K⁺ conduction and selectivity. *Science* 280: 69-77.

CHROMOSOMAL LOCATION

Genetic locus: KCNH₂ (human) mapping to 7q36.1; Kcnh₂ (mouse) mapping to 5 A3.

SOURCE

HERG (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HERG of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15966 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

HERG (N-20) is recommended for detection of HERG of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

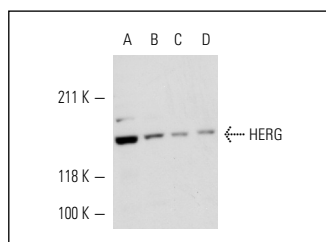
HERG (N-20) is also recommended for detection of HERG in additional species, including equine and canine.

Suitable for use as control antibody for HERG siRNA (h): sc-42497, HERG siRNA (m): sc-42498, HERG siRNA (r): sc-63268, HERG shRNA Plasmid (h): sc-42497-SH, HERG shRNA Plasmid (m): sc-42498-SH, HERG shRNA Plasmid (r): sc-63268-SH, HERG shRNA (h) Lentiviral Particles: sc-42497-V, HERG shRNA (m) Lentiviral Particles: sc-42498-V and HERG shRNA (r) Lentiviral Particles: sc-63268-V.

Molecular Weight of HERG: 127 kDa.

Positive Controls: EOC 20 whole cell lysate: sc-364187, mouse heart tissue extract: sc-2254 or rat heart tissue extract: sc-2393.

DATA



HERG (N-20): sc-15966. Western blot analysis of HERG expression in EOC 20 (A) and EOC 13.31 (B) whole cell lysates and rat (C) and mouse (D) heart tissue extracts.

SELECT PRODUCT CITATIONS

1. Jones, E.M., et al. 2004. Cardiac IKr channels minimally comprise HERG 1 α and 1 β subunits. *J. Biol. Chem.* 279: 44690-44694.
2. Muhlbauer, E., et al. 2007. Circadian changes of ether-a-go-go-related-gene (Erg) potassium channel transcripts in the rat pancreas and β -cell. *Cell. Mol. Life Sci.* 64: 768-780.
3. Guo, J., et al. 2009. Extracellular K⁺ concentration controls cell surface density of IKr in rabbit hearts and of the HERG channel in human cell lines. *J. Clin. Invest.* 119: 2745-2757.

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Try **HERG (F-12): sc-377388** or **HERG (F-3): sc-515611**, our highly recommended monoclonal alternatives to HERG (N-20)