

# HERG (C-20): sc-15968

## BACKGROUND

Human ether-a-go-go related gene (HERG) encodes the pore-forming  $\alpha$  subunit of the delayed rectifier potassium channel IKr. The HERG subunit contains six transmembrane  $\alpha$ -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 $\alpha$  and the shorter isoform 1 $\beta$ . Isoform 1 $\beta$  lacks the PAS motif and deactivates at a faster rate than isoform 1 $\alpha$ . 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.

## CHROMOSOMAL LOCATION

Genetic locus: KCNH<sub>2</sub> (human) mapping to 7q36.1; Kcnh<sub>2</sub> (mouse) mapping to 5 A3.

## SOURCE

HERG (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of HERG of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-15968 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

HERG (C-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  $\mu$ g per 100-500  $\mu$ 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 (C-20) is also recommended for detection of HERG in additional species, including equine, canine and porcine.

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: rat heart extract: sc-2393, mouse heart extract: sc-2254 or HERG (h12): 293 Lysate: sc-158600.

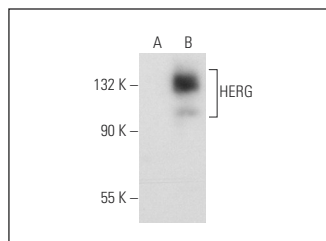
## RESEARCH USE

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

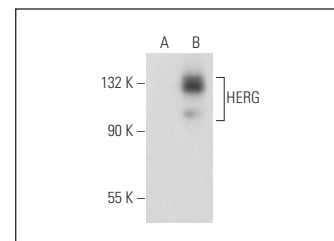
## STORAGE

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

## DATA



HERG (C-20): sc-15968. Western blot analysis of HERG expression in non-transfected: sc-110760 (A) and human HERG transfected: sc-158600 (B) 293 whole cell lysates.



HERG (C-20): sc-15968. Western blot analysis of HERG expression in non-transfected: sc-110760 (A) and human HERG transfected: sc-158613 (B) 293 whole cell lysates.

## SELECT PRODUCT CITATIONS

- Tomita, M., et al. 1994. Differential behavior of glial and neuronal cells exposed to hypotonic solution. *Acta Neurochir. Suppl.* 60: 31-33.
- Guo, J., et al. 2007. Identification of IKr and its trafficking disruption induced by probucol in cultured neonatal rat cardiomyocytes. *J. Pharmacol. Exp. Ther.* 321: 911-920.
- Chen, M.X., et al. 2007. Improved functional expression of recombinant human ether-a-go-go (hERG) K<sup>+</sup> channels by cultivation at reduced temperature. *BMC Biotechnol.* 7: 93.
- Zhao, J., et al. 2008. Silencing of herg gene by shRNA inhibits SH-SY5Y cell growth *in vitro* and *in vivo*. *Eur. J. Pharmacol.* 579: 50-57.
- Li, Y., et al. 2008. A-kinase anchoring protein targeting of protein kinase A and regulation of HERG channels. *J. Membr. Biol.* 223: 107-116.
- Guo, J., et al. 2009. Extracellular K<sup>+</sup> 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.
- Varadarajan, S., et al. 2012. A novel cellular stress response characterised by a rapid reorganisation of membranes of the endoplasmic reticulum. *Cell Death Differ.* 19: 1896-907.
- Hedley, P.L., et al. 2013. The role of CAV3 in long-QT syndrome: clinical and functional assessment of a caveolin-3/Kv11.1 double heterozygote versus caveolin-3 single heterozygote. *Circ. Cardiovasc. Genet.* 6: 452-461.

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