

# HERG (F-12): sc-377388



The Power to Question

## BACKGROUND

Human ether-à-go-go related gene (HERG) encodes the pore-forming  $\alpha$  subunit of the delayed rectifier potassium channel  $I_{Kr}$ . 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: KCNH2 (human) mapping to 7q36.1; Kcnh2 (mouse) mapping to 5 A3.

## SOURCE

HERG (F-12) is a mouse monoclonal antibody raised against amino acids 96-270 mapping near the N-terminus of HERG of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HERG (F-12) is available conjugated to agarose (sc-377388 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377388 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377388 PE), fluorescein (sc-377388 FITC), Alexa Fluor® 488 (sc-377388 AF488), Alexa Fluor® 546 (sc-377388 AF546), Alexa Fluor® 594 (sc-377388 AF594) or Alexa Fluor® 647 (sc-377388 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377388 AF680) or Alexa Fluor® 790 (sc-377388 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

HERG (F-12) is recommended for detection of HERG of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

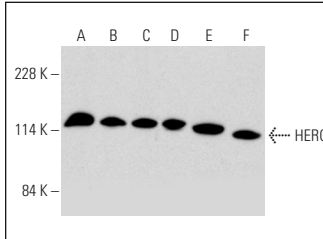
Molecular Weight of HERG: 127 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or RAW 264.7 whole cell lysate: sc-2211.

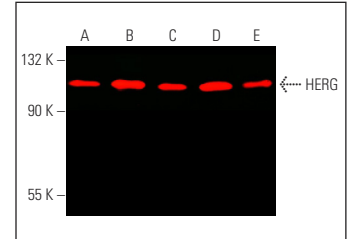
## STORAGE

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

## DATA



HERG (F-12): sc-377388. Western blot analysis of HERG expression in K-562 (A), EOC 20 (B), IMR-32 (C), RAW 264.7 (D), MCF7 (E) and Jurkat (F) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



HERG (F-12) Alexa Fluor® 790: sc-377388 AF790. Direct near-infrared western blot analysis of HERG expression in MCF7 (A), HT-29 (B), LADMAC (C), RBL-1 (D) and F9 (E) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

## SELECT PRODUCT CITATIONS

- Liu, Z., et al. 2017. Preclinical efficacy and safety of KCNH2-G628S gene therapy for postoperative atrial fibrillation. *J. Thorac. Cardiovasc. Surg.* 154: 1644-1651.e8.
- Lamothe, S.M., et al. 2018. Glycosylation stabilizes HERG channels on the plasma membrane by decreasing proteolytic susceptibility. *FASEB J.* 32: 1933-1943.
- Ma, S., et al. 2019. Human ether-à-go-go-related gene mutation L539fs/47-HERG leads to cell apoptosis through the endoplasmic reticulum stress pathway. *Int. J. Mol. Med.* 43: 1253-1262.
- Sutherland-Deveen, M.E., et al. 2019. Differential regulation of human ether-à-go-go-related gene (HERG) current and expression by activation of protein kinase C. *Mol. Pharmacol.* 96: 1-12.
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- Luo, C., et al. 2021. Pharmacological corrections of the mutant HERG channels by posaconazole. *Clin. Exp. Pharmacol. Physiol.* 48: 855-868.
- Song, L., et al. 2022. Sigma non-opioid receptor 1 is a potential therapeutic target for long QT syndrome. *Nat. Cardiovasc. Res.* 1: 142-156.
- Zhang, Y., et al. 2022. Evolutionary coupling analysis guides identification of mistrafficking-sensitive variants in cardiac K<sup>+</sup> channels: validation with hERG. *Front. Pharmacol.* 13: 1010119.

## RESEARCH USE

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

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