



SZABO SCANDIC

Part of Europa Biosite

Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!



Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 



6042 Cornerstone Court W, Ste B
San Diego, CA 92121
Tel: 1.858.829.3082
Fax: 1.858.481.8694
Email: info@bpsbioscience.com

Data Sheet

hERG (Kv11.1) - HEK293 Recombinant Cell line Cat #: 60619

Product description

Recombinant HEK293 cell line expressing human ERG potassium channel (ether-a-go-go-related gene, also known as KCNH2 or Kv11.1, accession number NM_000238).

Format

Each vial contains $\sim 1.5 \times 10^6$ cells in 1 ml of 10% DMSO

Storage

Immediately upon receipt, store vials in liquid nitrogen.

Mycoplasma testing

The cell line has been screened using the PCR-based VenorGeM[®] Mycoplasma Detection kit (Sigma-Aldrich) to confirm the absence of Mycoplasma species.

Introduction

hERG (human ether-a-go-go-related gene) encodes the alpha subunit of a potassium ion channel, Kv11.1. It contains six transmembrane α -helices with a re-entrant "pore-loop" between the fifth and the sixth transmembrane helices. This ion channel is best known for its contribution to the electrical activity of the heart that coordinates the heart's beating. When this channel's ability to conduct electrical current across the cell membrane is inhibited or compromised, either by application of drugs or by rare mutations, it can result in a potentially fatal disorder called long QT syndrome. A number of clinically successful drugs in the market exhibit the potential to inhibit hERG, and create a concomitant risk of sudden death as a side-effect, which has made hERG inhibition an important off-target that must be avoided during drug development.

Culture Conditions

Thaw Medium 1 (BPS Cat. #60187): MEM medium (Hyclone #SH30024.01) supplemented with 10% FBS (Invitrogen #26140-079), 1% non-essential amino acids (Hyclone #SH30238.01), 1 mM Na pyruvate (Hyclone #SH30239.01), 1% Penicillin/Streptomycin (Hyclone SV30010.01).

Growth Medium 1B (BPS Cat. #79531): Thaw Medium 1 (BPS Cat. #60187) plus 400 μ g/ml of Geneticin (Life Technologies #11811031) to ensure that recombinant expression is maintained. hERG-HEK293 cells should exhibit a typical cell division time of ~ 24 hours.

OUR PRODUCTS ARE FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

To place your order, please contact us by Phone **1.858.829.3082** Fax **1.858.481.8694**

Or you can Email us at: info@bpsbioscience.com

Please visit our website at: www.bpsbioscience.com



6042 Cornerstone Court W, Ste B
San Diego, CA 92121
Tel: 1.858.829.3082
Fax: 1.858.481.8694
Email: info@bpsbioscience.com

Cells should be grown at 37°C with 5% CO₂ using **Growth Medium 1B** (Thaw Medium 1 BPS Cat. #60187) plus 400 µg/ml of Geneticin (Life Technologies #11811031).

To thaw the cells, it is recommended to quickly thaw the frozen cells from liquid nitrogen in a 37°C water-bath, transfer to a tube containing 10 ml of Thaw Medium 1 (**no geneticin**) spin down cells, and resuspend cells in pre-warmed Thaw Medium 1 (**no geneticin**). Transfer resuspended cells to a T25 flask and culture in a CO₂ incubator at 37°C overnight. The next day, replace the medium with fresh Thaw Medium 1 (**no geneticin**), and continue growing culture in the CO₂ incubator at 37°C until the cells are ready to be split. Cells should reach ~80% confluence roughly two days after being thawed. Cells should be split before they reach complete confluence. At first passage, switch to Growth Medium 1B (**contains geneticin**).

To passage the cells, rinse cells with phosphate buffered saline (PBS), detach cells from culture vessel with 0.05% Trypsin/EDTA, and quench trypsin with Growth Medium 1B. Transfer to a tube, spin down cells, aspirate medium, resuspend cells in fresh Growth Medium 1B and seed appropriate aliquots of cell suspension into new culture vessels. Subcultivation ration: 1:10 to 1:20 weekly or twice a week.

Functional validation

Human ERG channel has been stably expressed in HEK293 cell line and its expression was confirmed by Western blotting (Figure 1).

The channel activity of hERG was characterized by a fluorescence-based assay using thallium influx as a surrogate indicator of potassium ion channel activity coupled with a thallium-sensitive fluorescent dye. When hERG-HEK293 cells were pre-loaded with thallium-sensitive dye and stimulated with stimulus buffer containing potassium/thallium, thallium ions flowed through the open hERG channels into the cells and bound the dye, generating a fluorescent signal. The hERG channel activity in hERG-HEK293 cells was blocked by hERG channel blockers, cisapride or dofetilide, causing the fluorescent signal triggered by thallium influx to drop to the basal level.

OUR PRODUCTS ARE FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

To place your order, please contact us by Phone **1.858.829.3082** Fax **1.858.481.8694**

Or you can Email us at: info@bpsbioscience.com

Please visit our website at: www.bpsbioscience.com

Figure 1. Western blot of hERG. hERG-HEK293 cells were probed with anti-hERG antibody (ThermoFisher # PA3860).

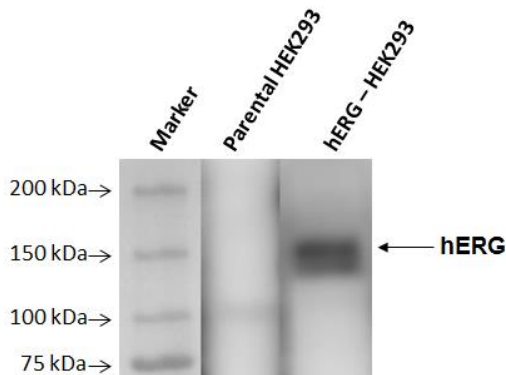
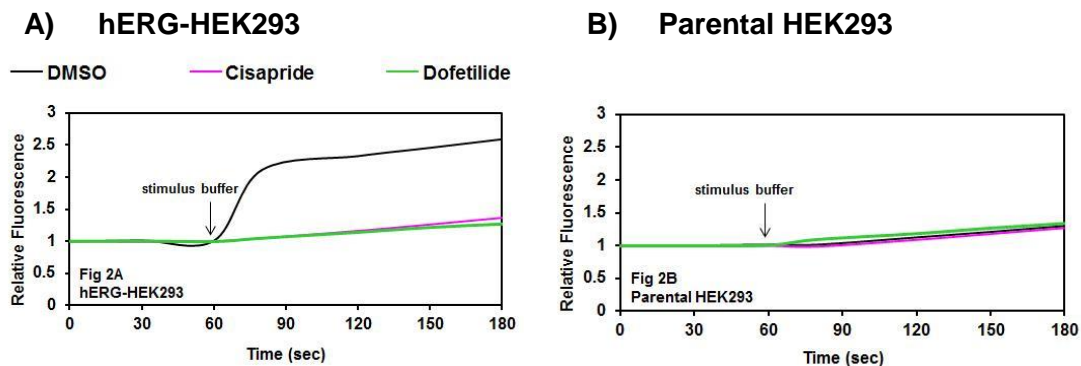


Figure 2. Thallium influx in hERG-HEK293 cells is blocked by cisapride or dofetilide. (A) hERG-HEK293 or (B) parental HEK293 cells were loaded with the thallium-sensitive fluorescent dye Thallos (TEFLABS) and treated with DMSO (black), 1 μ M of cisapride (pink), or 1 μ M of dofetilide (green). Cells were then stimulated (60s) with stimulus buffer containing thallium and potassium. The thallium influx, as a surrogate indicator of hERG channel activity, was measured by Thallos fluorescence (excitation 490 nm and emission 515 nm).



Vector and sequence

Human hERG was cloned into pIRES-neo vector (Clontech).

Polylinker: CMV-EcoRV-NheI-hERG-BamHI-NotI-BstXI-IRES-neomycin^R

hERG sequence (accession number NM_000238)

MPVRRGHVAPQNTFLDTIIRKFEQGSRKFIIANARVENCAVIYCNDGFCELCGYSRAEVMQRPCT
 CDFLHGPRTRRAAAQIAQALLGAEERKVEIAFYRKDGCFLCLVDVVPVKNEGDGAVIMFILNFE
 VVMEKDMVGSPPAHD TNHRGPPTS WLAPGRAKTFRLKLPALLALTARESSVRS GGAGGAGAPGAVV

OUR PRODUCTS ARE FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

To place your order, please contact us by Phone **1.858.829.3082** Fax **1.858.481.8694**

Or you can Email us at: info@bpsbioscience.com

Please visit our website at: www.bpsbioscience.com



6042 Cornerstone Court W, Ste B
San Diego, CA 92121
Tel: 1.858.829.3082
Fax: 1.858.481.8694
Email: info@bpsbioscience.com

VDVDLTPAAPSSSESLALDEVTAMDNHVAGLGPAAERRALVGPSPPRSAPGQLPSRAHSLNPDA
SGSSCSLARTRSRESCASVRRASSADDIEAMRAGVLP PPRHASTGAMHPLRSGLLNSTSDSDLV
RYRTISKIPQITLNFVDLKGDPFLASPTSDREIIAPKIKERTHNVTEKVTQVLSLGADVLPYKYL
QAPRIHRWTILHYSPPKAVWDWLILLLVIYTAVFTPYSA AFLKETE EGPPATECGYACQPLAVV
DLIVDIMFIVDILINFRTTYVNANEEVVSHPGRIAVHYFKGWFLIDMVA AIPFDLLIFGSGSEEL
IGLLKTARLLRLVRVARKLDRYSEYGA AVLFLMCTFALIAHWLACI WYAI GNMEQPHMDSRIGW
LHNLGDQIGKPYNSSGLGGPSIKDKYVTALYFTFSSLT SVGFGNVSPNTNSEKIF S ICVMLIGSL
MYASIFGNVSAIIQRLYSGTARYHTQMLRVREFIRFHQIPNPLRQRLEEYFQHAWSYTNGIDMNA
VLKGFPECLQADICLHLNRSLLQHCKPFRGATKGCLRALAMKFKTTHAPPGDTLVHAGDLLTALY
FISRGSIEILRGDVVVA I LGKNDIFGEPLNLYARPGKSN GDVRALTYCDLHKIHRDDLLEVLDMY
PEFSDHFWSSLEITFNLRDTNMI PGSPGSTELEGGFSRQRKRKLSFRRTDKDTEQ PGEVSALGP
GRAGAGPSSRGRPGGPWGES PSSGSPSESEDEGPRSSSPLRLVPFSSPRPPGEPGGEPLME
DCEKSSDTCNPLSGAFSGVSNIFSWGDSRGRQYQELPRCPAPT PSLNIP LSSPGRRPRGDVES
RLDALQRQLNRLETRLSADMATVLQQLQRQMTLVPPAYS AVTTPGPGPTSTSP LLLVSP LPTLTL
DSL SQVSQFMACEELPPGAPELPQEGPTRRLSLPGQLGALTSQPLHRHGSDPGS

References

Beacham, D.W. *et al.* (2010) Cell-based potassium ion channel screening using the FluxOR assay. *J. Biomol. Screen.* **15(4)**:441-446

Murphy, S.M. *et al.* (2006) Evaluation of functional and binding assays in cells expressing either recombinant or endogenous hERG channel. *J. Pharmacol. Toxicol. Methods.* **54(1)**:42-55

License Disclosure

Purchase of this cell line grants you with a 10-year license to use this cell line in your immediate laboratory, for research use only. This license does not permit you to share, distribute, sell, sublicense, or otherwise make the cell line available for use to other laboratories, departments, research institutions, hospitals, universities, or biotech companies. The license does not permit use of this cell line in humans or for therapeutic or drug use. The license does not permit modification of the cell line in any way. Inappropriate use or distribution of this cell line will result in revocation of the license and result in an immediate cease of sales and distribution of BPS products to your laboratory. BPS does not warrant the suitability of the cell line for any particular use, and does not accept any liability in connection with the handling or use of the cell line. Modifications of this cell line, transfer to another facility, or commercial use of the cells may require a separate license and additional fees; contact sales@bpsbioscience.com for details. Publications using this cell line should reference BPS Bioscience, Inc., San Diego.

OUR PRODUCTS ARE FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.
To place your order, please contact us by Phone **1.858.829.3082** Fax **1.858.481.8694**
Or you can Email us at: info@bpsbioscience.com
Please visit our website at: www.bpsbioscience.com