

Human Recombinant H2 Histamine Receptor Stable Cell Line

Cat. No. M00306

Version 05282014

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I. INTRODUCTION

Catalog Number: M00306

Cell Line Name: CHO-K1/H2/Gα15

Gene Synonyms: HRH2, DDX15, DBP1, H2R

Expressed Gene: Genbank Accession Number NM_022304; no expressed tags

Host Cell: CHO-K1/Gα15

Quantity: Two vials of frozen cells (3×10^6 per vial)

Stability: 16 passages

Application: Functional assay for H2 receptor

Freeze Medium: 45% culture medium, 45% FBS, 10% DMSO

Complete Growth Medium: Ham's F12, 10% FBS

Culture Medium: Ham's F12, 10% FBS, 200 µg/ml Zeocin, 100 µg/ml Hygromycin B

Mycoplasma Status: Negative

Storage: Liquid nitrogen immediately upon delivery.

II. BACKGROUND

Histamine is a ubiquitous messenger molecule released from mast cells, enterochromaffin-like cells, and neurons. Its various actions are mediated by histamine receptors H1, H2, H3, and H4. Specifically, the histamine receptor H2 belongs to the rhodopsin-like family of G protein-coupled receptors. As an integral membrane protein, it stimulates gastric acid secretion and regulates gastrointestinal motility and intestinal secretion and is thought to be involved in regulating cell growth and differentiation.

§: GenScript employs a PCR-based method to test the mycoplasma. The test covers 11 of the most common strains of mycoplasma, (covering approximately 95% of *M. fermentans*, *M. hyorhinis*, *M. arginini*, *M. orale*, *M. salivarium*, *M. hominis*, *M. pulmonis*, *M. arthritidis*, *M. neurolyticum*, *M. hyopneumoniae* and *M. capricolum*) and one species *Ureaplasma* (*U. urealyticum*), with sufficient sensitivity and specificity.

III. REPRESENTATIVE DATA

Concentration-dependent stimulation of intracellular calcium mobilization by Histamine in CHO-K1/H2/Gα15 and CHO-K1/Gα15 cells

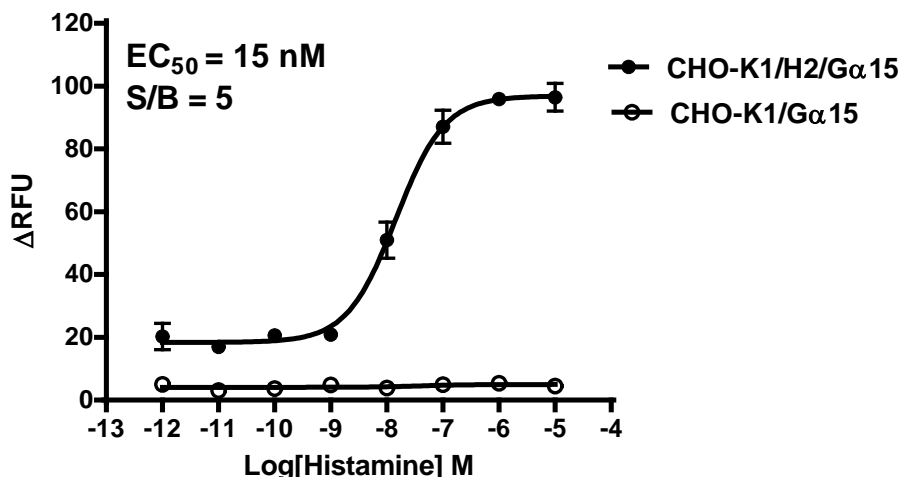


Figure 1. Histamine-induced concentration-dependent stimulation of intracellular calcium mobilization in CHO-K1/H2/Gα15 and CHO-K1/Gα15 cells. The cells were loaded with Calcium-4 prior to stimulation with a H2 receptor agonist, Histamine. The intracellular calcium change was measured by FlexStation. The relative fluorescent units (RFU) were plotted against the log of the cumulative doses (10-fold dilution) of Histamine (Mean ± SD, n = 2). The EC₅₀ of Histamine on H2 co-expressing with Gα15 in CHO-K1 cells was 15 nM. The S/B of Histamine on H2 co-expressing with Gα15 in CHO-K1 cells was 5.

Notes:

- EC₅₀ value is calculated with four parameter logistic equation:

$$Y = \text{Bottom} + (\text{Top} - \text{Bottom}) / (1 + 10^{-(\text{LogEC}_{50} - X) \cdot \text{HillSlope}})$$

X is the logarithm of concentration. Y is the response
Y is RFU and starts at Bottom and goes to Top with a sigmoid shape.
- Signal to background Ratio (S/B) = Top/Bottom

IV. THAWING AND SUBCULTURING

Thawing Protocol

- Remove the vial from liquid nitrogen tank and thaw cells quickly in a 37°C water-bath.
- Just before the cells are completely thawed, decontaminate the outside of the vial with 70% ethanol and transfer the cells to a 15 ml centrifuge tube containing 9 ml of complete growth medium.
- Pellet cells by centrifugation at 200 x g force for 5 min, and remove the medium.
- Resuspend the cells in complete growth medium.
- Transfer the cell suspension to a 10 cm dish with 10 ml of complete growth medium.
- Grow the cells in incubator with 37°C, 5 %CO₂.
- Add antibiotic in the following day.

Sub-culturing Protocol

1. Remove the culture medium from cells.
2. Wash cells with PBS (pH=7.4) to remove all traces of serum that contains trypsin inhibitor.
3. Add 2.0 ml of 0.05% (w/v) Trypsin- EDTA (GIBCO, Cat No. 25300) solution into 10 cm dish and observe the cells under an inverted microscope until cell layer is dispersed (usually within 3 to 5 minutes).
Note: To avoid cells clumping, do not agitate the cells by hitting or shaking the dish while waiting for the cells detach. If cells are difficult to detach, please place the dish in 37°C incubator for ~2 min.
4. Add 6.0 to 8.0 ml of complete growth medium into dish and aspirate cells by gently pipetting.
5. Centrifuge the cells at 200 x g force for 5min, and remove the medium.
6. Resuspend the cells in culture medium and add the cells suspension to new culture dish.
7. Grow the cells in incubator with 37°C, 5 %CO₂.

Subcultivation Ratio: 1:3 to 1:8 weekly.

Medium Renewal: Every 2 to 3 days

V. REFERENCES

1. Vannier E, Dinarello CA (1994) Histamine enhances interleukin (IL)-1-induced IL-6 gene expression and protein synthesis via H₂ receptors in peripheral blood mononuclear cells. *J. Biol. Chem.* 269 (13): 9952–6.
2. Smit MJ, Timmerman H, Alewijnse AE, *et al.* (1995) Visualization of agonist-induced internalization of histamine H₂ receptors. *Biochem. Biophys. Res. Commun.* 214 (3): 1138–45.

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