

Product Data Sheet

Product Name: H-Ala-OH

Cat. No.: GA11068

Chemical Properties

Cas. No. 56-41-7

Chemical Name (2S)-2-aminopropanoic acid

SMILES CC(C(=O)O)N

Formula $C_3H_7NO_2$

M.Wt 89.1

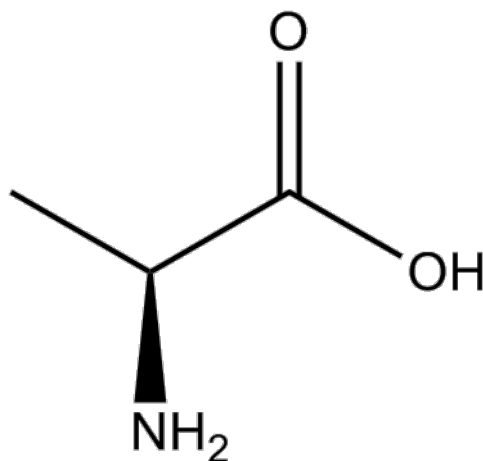
Solubility PBS (pH 7.2): 10mg/mL

Storage Desiccate at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Caution: Product has not been fully validated for medical applications. For research use only.

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Address: 10292 Central Ave. #205, Montclair, CA, USA

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Cell experiment: To investigate the selective removal of hiPSCs from differentiated cells by the high L-Alanine medium, two types of hiPSCs, 201B7 hiPSCs (201B7 cells) and an hiPSC line derived by episomal system (ehiPSCs) are used, along with normal human dermal fibroblasts (hFBs), human skeletal muscle cells (hSkMCs) and hiPSC-derived cardiomyocytes (iCMs) as differentiated cells. The cells are incubated in a medium supplemented with L-Alanine at various concentrations (0-1.2 M) or treatment times (1-24 h). The medium is replaced with a normal medium and the relative cell viability is measured after 24 h[1].

References:

[1]. Nagashima T, et al. Selective Elimination of Human Induced Pluripotent Stem Cells Using Medium with High Concentration of L-Alanine. Sci Rep. 2018 Aug 20;8(1):12427.

Background

L-Alanine is a non-essential amino acid, involved in sugar and acid metabolism, increases immunity, and provides energy for muscle tissue, brain, and central nervous system.

The viability of both hiPSCs, 201B7 cells and ehiPSCs decrease with an increase in L-Alanine concentration, and reach $7.5 \pm 1.3\%$ and $3.7 \pm 0.7\%$ respectively at 1.2 M of L-Alanine. On the other hand, no decrease in the viability of hFBs and hSkMCs are observed. Although the viability of iCMs slightly decreases along with the increase of the L-Alanine concentration, viability of iCMs at 1.2 M concentration of L-Alanine, $49.4 \pm 6.9\%$, is significantly higher than that of undifferentiated iPSCs, 201B7 cells and ehiPSCs ($p < 0.01$). The viability of hiPSCs, 201B7 cells and ehiPSCs, drastically decrease even after 2 or 4 h treatment. In contrast, the viability of hFBs fails to decrease at 1, 2, and 4 h and shows a small decrease at 24 h treatment. The viability of 201B7 cells in suspension culture decreases to $11.8 \pm 6.0\%$ following treatment with 1.2 M L-Alanine for 2 h, whereas that of hFBs is $72.9 \pm 14.2\%$ [1].

References:

[1]. Nagashima T, et al. Selective Elimination of Human Induced Pluripotent Stem Cells Using Medium with High Concentration of L-Alanine. Sci Rep. 2018 Aug 20;8(1):12427.

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