

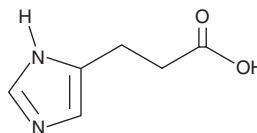
PRODUCT INFORMATION



Imidazole Propionate

Item No. 33458

CAS Registry No.: 1074-59-5
Formal Name: 1H-imidazole-5-propanoic acid
Synonyms: Deamino-histidine, Imidazolepropionic Acid, NSC 66737
MF: C₆H₈N₂O₂
FW: 140.1
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Imidazole propionate is supplied as a crystalline solid. Aqueous solutions of imidazole propionate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of imidazole propionate in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Imidazole propionate is a metabolite of histidine.¹ It is formed from histidine *via* a urocanate intermediate in gut microbiota by urocanate reductase (*urdA*). Imidazole propionate (100 μM) decreases protein levels of insulin receptor substrate 1 (IRS-1), IRS-2, and phosphorylated Akt and increases levels of the mTORC1 activation marker phosphorylated p70 ribosomal S6 kinase (p70S6K) in primary mouse hepatocytes. It induces deficits in glucose tolerance in germ-free and conventionally raised mice when administered at doses of 500 and 100 μg/animal, respectively. It also prevents reductions in blood glucose levels induced by metformin (Item No. 13118) in mice.² Plasma levels of imidazole propionate are increased in patients with type 2 diabetes.^{1,2}

References

1. Koh, A., Molinaro, A., Ståhlman, M., *et al.* Microbially produced imidazole propionate impairs insulin signaling through mTORC1. *Cell* **175**(4), 947-961 (2018).
2. Koh, A., Mannerås-Holm, L., Yunn, N.-O., *et al.* Microbial imidazole propionate affects responses to metformin through p38γ-dependent inhibitory AMPK phosphorylation. *Cell Metab.* **32**(4), 643-653 (2020).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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