

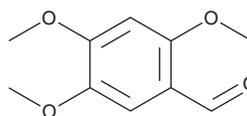
PRODUCT INFORMATION



Asaraldehyde

Item No. 36798

CAS Registry No.: 4460-86-0
Formal Name: 2,4,5-trimethoxy-benzaldehyde
Synonyms: Asaronaldehyde, Asarylaldehyde, NSC 89299, 2,4,5-trimethoxybenzaldehyde
MF: C₁₀H₁₂O₄
FW: 196.2
Purity: ≥98%
UV/Vis.: λ_{max}: 236, 275, 342 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



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

Laboratory Procedures

Asaraldehyde is supplied as a solid. A stock solution may be made by dissolving the asaraldehyde in the solvent of choice, which should be purged with an inert gas. Asaraldehyde is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of asaraldehyde in these solvents is approximately 10, 30, and 25 mg/ml, respectively.

Description

Asaraldehyde is a plant metabolite that has been found in *D. carota* and has diverse biological activities.¹⁻⁴ It selectively inhibits COX-2 over COX-1 when used at a concentration of 100 µg/ml and inhibits aggregation of washed isolated rabbit platelet-rich plasma induced by arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) or collagen (IC₅₀s = 53.7 and 27.6 µM, respectively).^{1,2} Asaraldehyde (1 mg/disc) is active against *C. perfirgens* and *C. difficile*.² It decreases triglyceride, perilipin 1, and leptin levels and increases glycerol and hormone-sensitive lipase (HSL) levels in differentiated 3T3-L1 mouse adipocytes, as well as enhances osteogenesis induced by osteogenic differentiation medium in primary human periodontal ligament stem cells when used at a concentration of 100 µg/ml.^{3,4} Asaraldehyde has been used as a building block in the synthesis of various chalcones and flavonoids with anticancer and antioxidant activities.⁵

References

1. Momin, R.A., De Witt, D.L., and Nair, M.G. Inhibition of cyclooxygenase (COX) enzymes by compounds from *Daucus carota* L. seeds. *Phytother. Res.* **17(8)**, 976-979 (2003).
2. Kim, H.-G., Jeon, J.-H., Kim, M.-K., et al. Pharmacological effects of asaronaldehyde isolated from *Acorus gramineus* rhizome. *Food Sci. Biotechnol.* **14(5)**, 685-688 (2005).
3. Wu, M.-R., Hou, M.-H., Lin, Y.-L., et al. 2,4,5-TMBA, a natural inhibitor of cyclooxygenase-2, suppresses adipogenesis and promotes lipolysis in 3T3-L1 adipocytes. *J. Agric. Food Chem.* **60(29)**, 7262-7269 (2012).
4. Hwang, J.W., Park, W.-J., and Han, Y. Asarylaldehyde enhances osteogenic differentiation of human periodontal ligament stem cells through the ERK/p38 MAPK signaling pathway. *Biochem. Biophys. Res. Commun.* **545**, 27-32 (2021).
5. Shenvi, S., Kumar, K., Hatti, K.S., et al. Synthesis, anticancer and antioxidant activities of 2,4,5-trimethoxy chalcones and analogues from asaronaldehyde: Structure-activity relationship. *Eur. J. Med. Chem.* **62**, 435-442 (2013).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM