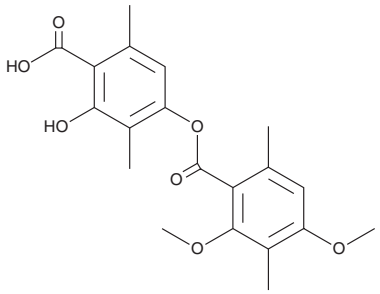
PRODUCT INFORMATION

Diffractaic Acid

Item No. 24208

CAS Registry No.:	436-32-8
Formal Name:	2,4-dimethoxy-3,6-dimethyl-benzoic acid, 4-carboxy-3-hydroxy-2,5-dimethylphenyl ester
Synonyms:	NSC 5901, NSC 685595
MF:	$C_{20}H_{22}O_7$
FW:	374.4
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Fungus/*Cladia* sp.



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

Laboratory Procedures

Diffractaic acid is supplied as a solid. A stock solution may be made by dissolving the diffractaic acid in the solvent of choice, which should be purged with an inert gas. Diffractaic acid is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide.

Description

Diffractaic acid is a lichen metabolite that has been found in *P. magellanica* and has diverse biological activities.[1-4] It is cytotoxic to HCT116, HeLa, and MCF-7 cancer cells (IC_{50}s = 42.2, 64.6, and 93.4 µM, respectively).[1] Diffractaic acid inhibits growth of *M. tuberculosis* (MIC = 41.7 µM).[2] *In vivo*, diffractaic acid (25-200 mg/kg) reduces neutrophil infiltration, lipid peroxidation, myeloperoxidase (MPx) activity, and the number of gastric lesions as well as reverses decreases in superoxide dismutase (SOD) and glutathione peroxidase (GPx) activities induced by indomethacin (Item No. 70270) in rat gastric mucosa.[3] Diffractaic acid also has analgesic activity, reducing acetic acid-induced writhing and increasing the pressure pain threshold in mice.[4]

References

1. Brisdelli, F., Perilli, M., Selitri, D., *et al.* Cytotoxic activity and antioxidant capacity of purified lichen metabolites: An *in vitro* study. *Phytother. Res.* **27(3)**, 431-437 (2013).
2. Honda, K., Pavan, F.R., Coelho, R.G., *et al.* Antimycobacterial activity of lichen substances. *Phytomedicine* **17(5)**, 328-332 (2010).
3. Bayir, Y., Odabasoglu, F., Cakir, A., *et al.* The inhibition of gastric mucosal lesion, oxidative stress and neutrophil-infiltration in rats by the lichen constituent diffractaic acid. *Phytomedicine* **13(8)**, 584-590 (2006).
4. Okuyama, E., Umeyama, K., Yamazaki, M., *et al.* Usnic acid and diffractaic acid as analgesic and antipyretic components of *Usnea diffracta*. *Planta Med.* **61(2),** 113-115 (1995).

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