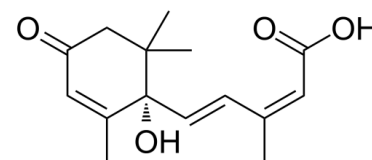


Data Sheet

Product Name:	Abscisic acid
Cat. No.:	CS-0019706
CAS No.:	21293-29-8
Molecular Formula:	C ₁₅ H ₂₀ O ₄
Molecular Weight:	264.32
Target:	Endogenous Metabolite; Proton Pump
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease
Solubility:	DMSO : 100 mg/mL (378.33 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Abscisic acid ((S)-(+)-Abscisic acid), an orally active phytohormone in fruits and vegetables, is an endogenously produced mammalian hormone. Abscisic acid is a growth inhibitor and can regulate many aspects of plant growth and development. Abscisic acid inhibits **proton pump (H⁺-ATPase)** and leads to the plasma membrane depolarization in a Ca²⁺-dependent manner. Abscisic acid, a LANCL2 natural ligand, is a potent insulin-sensitizing compound and has the potential for pre-diabetes, type 2 diabetes and metabolic syndrome^{[1][2]}. **In Vitro:** In Arabidopsis cell cultures, Abscisic acid ((S)-(+)-Abscisic acid; 10 μM) simultaneously induces rapid alkalization of the medium and plasma membrane depolarization^[1].

Abscisic acid (10 μM) increases Ca²⁺ in cytosol of Arabidopsis cell suspension. Abscisic acid does not inhibit proton pumping directly but through an increase in cytosolic Ca²⁺^[1].

Lanthionine synthetase C-like 2 (LANCL2) is the natural receptor for Abscisic acid. Abscisic acid, both at the organism levels and in specific muscle cells ex vivo, increases both glucose and fatty acid metabolism in the mitochondria, increases glycogen synthesis, activates PI3K independently of insulin and promotes GLUT4 translocation to the cell membrane^[2].

In Vivo: Abscisic acid (orally; 0.125 μg/kg/day; for 12 weeks) improves glycemic control^[2].

Abscisic acid (orally; 0.125 μg/kg/day; for 12 weeks) results in significantly lower levels of TNF, MCP-1 and IL-6 in the DIO model.

Abscisic acid increases metabolic activity in skeletal muscle^[2].

References:

[1]. Mathias Brault, et al. Plasma membrane depolarization induced by abscisic acid in Arabidopsis suspension cells involves reduction of proton pumping in addition to anion channel activation, which are both Ca²⁺ dependent. *Plant Physiol.* 2004 May;135(1):231-43.

[2]. Andrew Leber, et al. Abscisic acid enriched fig extract promotes insulin sensitivity by decreasing systemic inflammation and activating LANCL2 in skeletal muscle. *Sci Rep.* 2020 Jun 26;10(1):10463.

CAIndexNames:

2,4-Pentadienoic acid, 5-[(1S)-1-hydroxy-2,6,6-trimethyl-4-oxo-2-cyclohexen-1-yl]-3-methyl-, (2Z,4E)-

SMILES:

O=C(O)/C=C(C)C=C[C@@]1(O)C(C)=CC(CC1(C)C)=O

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

Tel: 610-426-3128

Fax: 888-484-5008

E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA