(+)-Abscisic Acid (natural)
PRODUCT DATA SHEET

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Product Name:	(+)-Abscisic Acid (natural)
Product Number:	A153
CAS Number:	21293-29-8
Molecular Formula:	$C_{15}H_{20}O_4$
Molecular Weight:	264.32
Form:	Powder
Appearance:	white or crystalline powder
Source:	natural
Storage Conditions:	-20°C
Description:	(+)-Abscisic Acid (natural) is the naturally occurring form of Abscisic Acid (ABA), a classical plant growth regulator. It was isolated in 1963 from young cotton fruits by FT Addicott and was originally named Abscisin II. It is the (+), or S enantiomer. It is involved in many cellular processes such as stomatal movement, water and ion uptake control, leaf abscission and senescence. It is also produced by some phytopathogenic fungi (via a farnesyl pyrophosphate) and bacteria. It is also produced by some metazoans, ranging from sea sponges to humans, although its biosynthesis and role in animals is poorly known. It can be used as a neutraceutical, but it is also made by some cells such as macrophages, when they are stimulated.

We also offer:

- (±)-cis,trans-Abscisic Acid (synthetic) (A068)

Mechanism of Action:

Abscisic Acid is a plant growth regulator produced indirectly from plant carotenoids. It can regulate the gene expression in plants via complex intracellular signaling. It plays an important role in response to environmental stress and plant pathogens.

In mammals, ABA targets a protein called lanthionine synthetase C-like 2 (LANCL2), triggering a mechanism of activation of peroxisome proliferator-activated receptor gamma (PPAR gamma).

Plant Biology Applications

(+)-Abscisic Acid (natural)(ABA) is the naturally occurring form of Abscisic Acid. Compared with other plant growth regulators, the effects of ABA are multifaceted and can antagonize or modify the effects of other plant growth regulators. In embryo development and maturation, ABA has shown to regulate gene expression (George et al., 2008). In tissue culture ABA has shown a double effect on callus growth: at low concentrations ABA shows a positive effect on callus growth while higher concentrations demonstrate inhibitory callus growth effects (George et al., 2008).

References:

Cutler SR, Rodriquez PL, Finkelstein RR and Abrams SR (2010) Abscisic acid: Emergence of a core signaling network. Ann. Rev. Plant Biol. 61:651-679

Finkelstein R (2013) Abscisic acid synthesis and response. Arabidopsis Book. 11:e0166 PMID 24273463

George EF, Hall MA. and Klerk GJD (2008) Chapter 7. Plant growth regulators III: Gibberellins, ethylene, abscisic acid, their analogues and inhibitors; Miscellaneous compounds. In: Plant Propagation by Tissue Culture 3rd ed. Finkelstein R (2013) Abscisic acid synthesis and response. Arabidopsis Book. 11:e0166 PMID 24273463