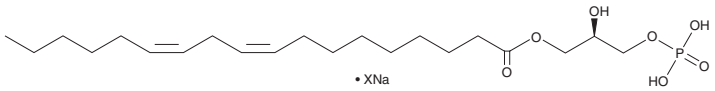
PRODUCT INFORMATION

1-Linoleoyl Lysophosphatidic Acid (sodium salt)

Item No. 38309

CAS Registry No.:	72777-86-7
Formal Name:	9Z,12Z-octadecadienoic acid, 2R-hydroxy-3-(phosphonooxy)propyl ester, sodium salt
Synonyms:	1-Linoleoyl LPA, 1-Linoleoyl Lysophosphatidic Acid, LPA 18:2, 18:2 LPA, 1-Octadecadienoyl-2-hydroxy-*sn*-glycero-3-phosphate, PA(18:2/0:0)
MF:	$C_{21}H_{39}O_7P \bullet XNa$
FW:	434.5
Purity:	≥95% (mixture of isomers)
Supplied as:	A 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

1-Linoleoyl-2-hydroxy-sn-glycero-3-PA (1-linoleoyl LPA) (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the 1-linoleoyl LPA (sodium salt) in the solvent of choice, which should be purged with an inert gas. 1-linoleoyl LPA (sodium salt) is soluble in the organic solvent methanol.

Description

1-linoleoyl LPA is an agonist of the LPA_2 receptor and a glycerophospholipid containing linoleic acid (Item Nos. 90150 | 90150.1 | 21909) at the *sn*-1 position.[1] It is the most abundant LPA in mouse and human plasma.[2,3] 1-Linoleoyl LPA selectively increases intracellular calcium levels in LPA_2 receptor-expressing Sf9 cells (EC_{50} = ~10 nM) over LPA_1 and LPA_3 receptor-expressing Sf9 cells (EC_{50}s = ~200 and ~80 nM, respectively).[1] Serum levels of 1-linoleoyl LPA are increased in mice bearing NCTC clone 2472 tumors.[4] Plasma 1-linoleoyl LPA levels are decreased in patients with primary progressive, but not relapsing-remitting, multiple sclerosis and are negatively correlated with neurological deficit severity.[5]

References

1. Bandoh, K., Aoki, J., Taira, A., *et al.* Lysophosphatidic acid (LPA) receptors of the EDG family are differentially activated by LPA species. Structure-activity relationship of cloned LPA receptors. *FEBS Lett.* **478(1-2)**, 159-165 (2000).
2. Baker, D.L., Desiderio, D.M., Miller, D.D., *et al.* Direct quantitative analysis of lysophosphatidic acid molecular species by stable isotope dilution electrospray ionization liquid chromatography-mass spectrometry. *Anal. Biochem.* **292(2)**, 287-295 (2001).
3. Kano, K., Matsumoto, H., Kono, N., *et al.* Suppressing postcollection lysophosphatidic acid metabolism improves the precision of plasma LPA quantification. *J. Lipid Res.* **62**, 100029 (2021).
4. Khasabova, I.A., Khasabov, S.G., Johns, M., *et al.* Exosome-associated lysophosphatidic acid signaling contributes to cancer pain. *Pain* (2023).
5. Amatruda, M., Petracca, M., Wentling, M., *et al.* Retrospective unbiased plasma lipidomic of progressive multiple sclerosis patients-identifies lipids discriminating those with faster clinical deterioration. *Sci. Rep.* **10(1)**, 15644 (2020).

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