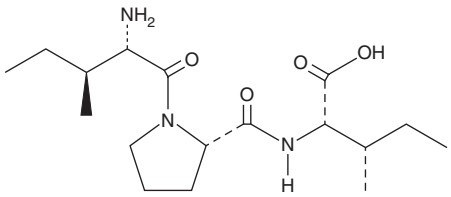
PRODUCT INFORMATION

Diprotin A

Item No. 28014

CAS Registry No.:	90614-48-5
Formal Name:	L-isoleucyl-L-prolyl-L-isoleucine
Synonym:	Ile-Pro-Ile
MF:	$C_{17}H_{31}N_3O_4$
FW:	341.5
Purity:	≥98%
Supplied as:	A crystalline 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

Diprotin A is supplied as a crystalline solid. A stock solution may be made by dissolving the diprotin A in the solvent of choice, which should be purged with an inert gas. Diprotin A is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of diprotin A in these solvents is approximately 10, 25, and 33 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of diprotin A can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of diprotin A in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Diprotin A is a tripeptide inhibitor of dipeptidyl peptidase 4 (DPP-4; IC_{50} = 1.1 µg/ml).[1] It inhibits degradation of glucagon-like peptide 1 (GLP-1; Item No. 24460) in culture with insulin-secreting BRIN-BD11 rat pancreatic β-cells when used at a concentration of 25 µM.[2] Diprotin A (5 mg/ml) pre-incubation enhances chemotaxis of murine embryonic stem cells towards stromal cell-derived factor-1 (SDF-1/CXCL12) *in vitro*.[3] Pre-incubation of $CD34^+$ human umbilical cord blood cells with diprotin A (5 mM) prior to injection increases engraftment in NOD/SCID recipient mice.[4]

References

1. Umezawa, H., Aoyagi, T., Ogawa, K., *et al.* Diprotins A and B, inhibitors of dipeptidyl aminopeptidase IV, produced by bacteria. *J. Antibiot. (Tokyo)* **37(4)**, 422-425 (1984).
2. Green, B.D., Liu, H.K., McCluskey, J.T., *et al.* Function of a long-term, GLP-1-treated, insulin-secreting cell line is improved by preventing DPP IV-mediated degradation of GLP-1. *Diabetes Obes. Metab.* **7(5)**, 563-569 (2005).
3. Guo, Y., Hangoc, G., Bian, H., *et al.* SDF-1/CXCL12 enhances survival and chemotaxis of murine embryonic stem cells and production of primitive and definitive hematopoietic progenitor cells. *Stem Cells* **23(9)**, 1324-1332 (2005).
4. Campbell, T.B., Hangoc, G., Liu, Y., *et al.* Inhibition of CD26 in human cord blood $CD34^+$ cells enhances their engraftment of nonobese diabetic/severe combined immunodeficiency mice. *Stem Cells Dev.* **16(3)**, 347-354 (2007).

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