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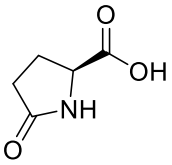
PRODUCT DATA SHEET

L-Pyroglutamic acid

Code No.: **BIA-P2214**

Pack sizes: **1 mg, 5 mg**



Synonyms : 5-Oxo-L-proline, NSC 143034, (2S)-5-Oxopyrrolidine-2-carboxylic acid

Specifications

CAS #	:	**98-79-3**
Molecular Formula	:	**$C_5H_7NO_3$**
Molecular Weight	:	**129.1**
Source	:	**Synthetic**
Appearance	:	**White solid**
Purity	:	**>95% by HPLC**
Long Term Storage	:	**-20°C**
Solubility	:	**Soluble in methanol or DMSO.**

Application Notes

L-Pyroglutamic acid (pidolic acid, 5-oxo-L-proline , (S)-5-oxopyrrolidine-2-carboxylic acid) is a naturally occurring γ-lactam formed enzymically. It may also be formed synthetically by the thermal head-to-tail cyclisation of L-glutamic acid. Elevated plasma levels of pyroglutamic acid are associated with aberrant glutamine and glutathione metabolism. L-Pyroglutamic acid is used in dietary supplements for cognitive and memory enhancement, although such use is not clinically validated. Microbial metabolites consisting of pyroglutamide conjugated with amino acid esters have been isolated from Lactobacillus plantarum and possess immunomodulatory activity. Indeed, the thioproline-conjugated amide, pidotimod, is a commercially available immunostimulant.

References

1. Small molecule immunomodulins from cultures of the human microbiome member Lactobacillus plantarum. Zvanych R. et al. J Antibiot. 2014, 67, 85.
2. Pidotimod: The state of art. Ferrario B.E. et al. Clin Molec Allergy 2015, 13, 8.
3. Synthesis and bioactivities evaluation of L-pyroglutamic acid analogues from natural product leads. Gang F-L. et al. Bioorg Med Chem. 2018, 26, 4644.

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Building C, 28-54 Percival Road, Smithfield, NSW 2164, AUSTRALIA
Tel: 61 2 9757 4515 Fax: 61 2 9757 2586 Web: www.bioaustralis.com Email: info@bioaustralis.com