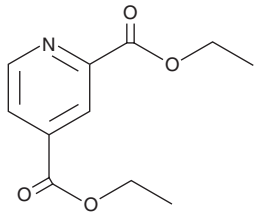
PRODUCT INFORMATION

2,4-DPD

Item No. 71200

CAS Registry No.: 41438-38-4
Formal Name: 2,4-pyridinedicarboxylic acid, diethyl ester
Synonym: 2,4-Diethylpyridine dicarboxylate
MF: $C_{11}H_{13}NO_4$
FW: 223.2
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2,4-DPD is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of 2,4-DPD in these solvents is approximately 50, 20, and 30 mg/ml, respectively.

2,4-DPD is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of 2,4-DPD should be diluted with the aqueous buffer of choice. The solubility of 2,4-DPD in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The pro-angiogenic factor HIF-1α is targeted for destruction in normoxic environments by the hydroxylation of a specific proline residue, P564, by the oxygen-sensing enzyme HIF-α prolyl hydroxylase (HIF-PH).[1] 2,4-DPD is a cell permeable, competitive inhibitor of HIF-PH. 2,4-DPD inhibits the hydroxylation of P564 by acting as a competitive inhibitor of the HIF-PH cofactor α-keto glutarate, with effective concentrations in the low µM range.[2] 2,4-DPD is therefore expected to act as a pro-angiogenic compound, *via* the HIF-1α system.[3,4]

References

1. Jaakkola, P., Mole, D.R., Tian, Y.-M., *et al.* Targeting of HIFα to the von Hippel-Lindau ubiquitylation complex by O_2-regulated prolyl hydroxylation. *Science* **292(5516)**, 468-472 (2001).
2. Friedman, L., Higgin, J.J., Moulder, G., *et al.* Prolyl 4-hydroxylase is required for viability and morphogenesis in *Caenorhabditis elegans*. *Proc. Natl. Acad. Sci. USA* **97(9)**, 4736-4741 (2000).
3. Bruick, R. and McKnight, S.L. A conserved family of prolyl-4-hydroxylases that modify HIF. *Science* **294 (5545)**, 1337-1340 (2001).
4. Ivan, M., Kondo, K., Yang, H., *et al.* HIFα targeted for VHL-mediated destruction by proline hydroxylation: implications for O_2 sensing. *Science* **292(5516)**, 464-468 (2001).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM