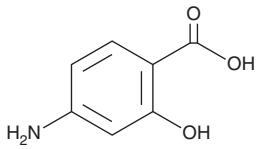
PRODUCT INFORMATION

4-Aminosalicylic Acid

Item No. 33449

CAS Registry No.:	65-49-6
Formal Name:	4-amino-2-hydroxy-benzoic acid
Synonyms:	*p*-Aminosalicylic Acid, 4-ASA, NSC 2083, NSC 211698, PAS, Sanipirol-4
MF:	$C_7H_7NO_3$
FW:	153.1
Purity:	≥95%
UV/Vis.:	λ_{max}: 240, 284, 306 nm
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

4-Aminosalicylic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-aminosalicylic acid in the solvent of choice, which should be purged with an inert gas. 4-Aminosalicylic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 4-aminosalicylic acid in these solvents is approximately 30 mg/ml.

Description

4-Aminosalicylic acid is an antimetabolite of *p*-aminobenzoic acid (PABA; Item No. 18659) that has antibacterial activity.[1,2] It is active against streptomycin-sensitive and -resistant strains of *M. tuberculosis* (MICs = 0.78 and 0.39 µg/ml, respectively), an effect that can be reversed by PABA.[1] 4-Aminosalicylic acid is an alternative substrate for mycobacterial dihydropteroate synthase (FolP1) and misincorporation into the folate pathway leads to accumulation of several folate-dependent metabolites including serine, homocysteine, dUMP, and AICAR, markers of folate pathway inhibition, in a concentration-dependent manner.[2] It reverses manganese-induced increases in rat hippocampal levels of NOD-like receptor protein 3 (NLRP3), cleaved caspase-1, and phosphorylated p65, markers of NLRP3 inflammasome-dependent pyroptosis, when administered at a dose of 300 mg/kg.[3] 4-Aminosalycilic acid is also a building block that has been used in the synthesis of luminescent lanthanide complexes.[4] Formulations containing 4-aminosalicylic acid have been used in the treatment of tuberculosis.

References

1. Youmans, G.P., Raleigh, G.W., and Youmans, A.S. The tuberculostatic action of para-aminosalicylic acid. *J. Bacteriol.* **54(4)**, 409-416 (1947).
2. Chakraborty, S., Gruber, T., Barry, C.E., III, *et al.* Para-aminosalicylic acid acts as an alternative substrate of folate metabolism in *Mycobacterium tuberculosis*. *Science* **339(6115)**, 88-91 (2013).
3. Peng, D., Li, J., Deng, Y., *et al.* Sodium para-aminosalicylic acid inhibits manganese-induced NLRP3 inflammasome-dependent pyroptosis by inhibiting NF-κB pathway activation and oxidative stress. *J. Neuroinflammation* **17(1)**, 343 (2020).
4. Terai, T., Ito, H., Kikuchi, K., *et al.* Salicylic-acid derivatives as antennae for ratiometric luminescent probes based on lanthanide complexes. *Chemistry* **18(24)**, 7377-7381 (2012).

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