

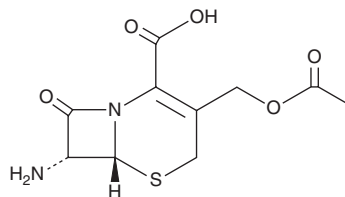
# PRODUCT INFORMATION



## 7-Aminocephalosporanic Acid

Item No. 35824

**CAS Registry No.:** 957-68-6  
**Formal Name:** (6R,7R)-3-[(acetyloxy)methyl]-7-amino-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid  
**Synonym:** 7-ACA  
**MF:** C<sub>10</sub>H<sub>12</sub>N<sub>2</sub>O<sub>5</sub>S  
**FW:** 272.3  
**Purity:** ≥98%  
**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

7-Aminocephalosporanic acid (7-ACA) is supplied as a solid. A stock solution may be made by dissolving the 7-ACA in water. We do not recommend storing the aqueous solution for more than one day.

### Description

7-ACA is a building block of cephalosporin antibiotics, including cephalosporin C (Item No. 33262) and cefapirin (Item No. 17406).<sup>1,2</sup> It binds to heat shock protein 90 $\beta$  (Hsp90 $\beta$ ; K<sub>d</sub> = 6.201  $\mu$ M) and inhibits sterol regulatory element binding protein (SREBP) activation in a reporter assay using HI 7702 cells when used at a concentration of 40  $\mu$ M.<sup>3</sup> 7-ACA (40  $\mu$ M) inhibits increases in total cholesterol and triglyceride levels induced by palmitic acid (Item No. 10006627) and oleic acid (Item Nos. 90260 | 24659) in HepG2 cells. It reduces hepatic steatosis in mice fed a high-fat diet when administered at doses ranging from 5 to 25 mg/kg. 7-ACA (10 mg/kg) inhibits the growth of *M. leprae* in mice.<sup>4</sup> It is also a potential impurity in commercial preparations of cefoperazone.<sup>5</sup>

### References

1. Loder, B., Newton, G.G., and Abraham, E.P. The cephalosporin C nucleus (7-aminocephalosporanic acid) and some of its derivatives. *Biochem. J.* **79(2)**, 408-416 (1961).
2. Crast, L.B., Jr, Graham, R.G., and Cheney, L.C. Synthesis of cephalosporins from 7-( $\alpha$ -bromoacetamido)cephalosporanic acid. *J. Med. Chem.* **16(12)**, 1413-1415 (1973).
3. Zhang, W., Xue, H., Zhou, C., et al. 7-aminocephalosporanic acid, a novel HSP90 $\beta$  inhibitor, attenuates HFD-induced hepatic steatosis. *Biochem. Biophys. Res. Commun.* **622**, 184-191 (2022).
4. Shepard, C.C., Van Landingham, R.M., Walker, L.L., et al. Activity of selected beta-lactam antibiotics against *Mycobacterium leprae*. *Int. J. Lepr. Other Mycobact. Dis.* **55(2)**, 322-327 (1987).
5. Abdelaleem, E.A., Naguib, I.A., Zaazaa, H.E., et al. Development and validation of HPLC and HPTLC methods for determination of cefoperazone and its related impurities. *J. Chromatogr. Sci.* **54(2)**, 179-186 (2016).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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