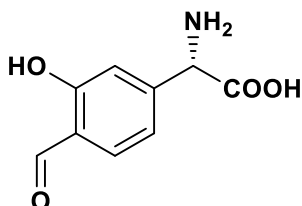


## PRODUCT DATA SHEET

Date: May 20, 2020

### Forphenicine (Inhibitor for alkaline phosphatase)



Synonyms:

### Specifications

Code No.	: 09636
CAS#	: 57784-96-0
Molecular Formula	: C <sub>9</sub> H <sub>9</sub> NO <sub>4</sub>
Molecular Weight	: 195.174
Source	: <i>Streptomyces fulvoviridis</i> var. <i>acarbodicus</i> MC974-A5
Appearance	: Pale yellow crystals
Purity	: > 90% (HPLC)
Long Term Storage	: at - 20 °C
Solubility	: Soluble in diluted acetic acid and H <sub>2</sub> O and diluted aqueous HCl Insoluble in MeOH, Benzene, Pyridine and DMSO.

### Application Notes

Forphenicine is isolated from fermentation broth of *Streptomyces fulvoviridis* var. *acarbodicus* MC974-A5.<sup>1,2</sup> Forphenicine shows potent inhibition against alkaline phosphatase prepared from chicken intestine (IC<sub>50</sub> value is 0.036 µg/mL) and slightly inhibits the enzymes prepared from calf intestine, liver and *Escherichia coli*. The type of inhibition of chicken intestine enzyme by forphenicine is uncompetitive with p-nitrophenyl phosphate and its *K<sub>i</sub>* value is 1.64 × 10<sup>-7</sup>M.<sup>1</sup> Forphenicine enhances delayed-type hypersensitivity(DTH) and increase the number of antibody-forming in mice. Forphenicinol, orally administrable forphenicine derivative, has been studied.<sup>3,4</sup>

### References

- 1) Forphenicine, an inhibitor of alkaline phosphatase produced by actinomycetes. Aoyagi T, *et al. J Antibiot.* 1978 **31**(3) 244-246.
- 2) The structure of forphenicine. Yamamoto T, *et al. J Antibiot.* 1978 **31**(5) 483-484.
- 3) Synthesis of forphenicinol and forphenicine. Morishima H, *et al. J Antibiot.* 1982 **35**(11) 1500-1506.
- 4) Studies on effects of forphenicinol on immune responses. Ishizuka M, *et al. J Antibiot.* 1982 **35**(8) 1042-1048