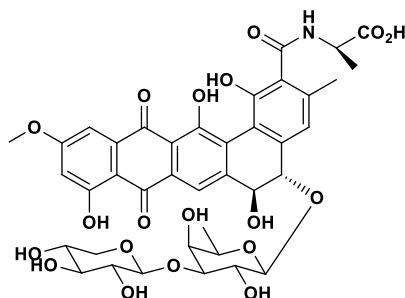


## PRODUCT DATA SHEET

Date: May 20, 2020

### Benanomicin A



Synonyms:

### Specifications

Code No.	: 02966
CAS#	: 116249-65-1
Molecular Formula	: C <sub>39</sub> H <sub>41</sub> NO <sub>19</sub>
Molecular Weight	: 827.745
Source	: <i>Actinomadura</i> sp. MH193-16F4
Appearance	: Dark red powder
Purity	: > 90% (HPLC)
Long Term Storage	: at - 20 °C
Solubility	: Soluble in DMSO, DMF. Poorly soluble in MeOH, CHCl <sub>3</sub> . Insoluble in H <sub>2</sub> O.

### Application Notes

Benanomicin A is isolated from the culture filtrates of *Actinomadura* sp. MH193-16F4.<sup>1,2)</sup> It shows excellent activities against a wide range of fungi including *Candida*, *Cryptococcus* and *Aspergillus*.<sup>1,3)</sup> Benanomicin A demonstrated excellent therapeutic efficacy against in a *Pneumocystis carinii*-infected mouse model.<sup>4)</sup> Benanomicin A also inhibited infection of human T-cells with human immunodeficiency virus (HIV-1) at 30~100 µg/mL and inhibited syncytium formation induced by HIV-1 at 10~100 µg/mL.<sup>5)</sup> The antifungal and anti HIV-1 activities of benanomicins and their analogues have been studied.<sup>6)</sup> Benanomicin A has antimycotic activities via binding to mannan in the cell walls of fungi.<sup>7)</sup> In recent years, the lectin-like functionality of Benanomicin A has been utilized to conduct research on preparing the mannan cell walls.<sup>8,9)</sup>

### References

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- 2) The structures of new antifungal antibiotics, benanomicins A and B. Gomi S, *et al. J Antibiot.* 1988 **41**(8) 1019-1028.
- 3) The in-vitro activity of an antifungal antibiotic benanomicin A in comparison with amphotericin B. Watanabe M, *et al. J Antimicrob Chemother.* 1996 **38**(6) 1073-1077.
- 4) Successful treatment of *Pneumocystis carinii* pneumonia in mice with benanomicin A (ME1451). Yasuoka A, *et al. Antimicrob. Agents. Chemother.* 1995 **39**(3) 720-724.
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- 6) Antifungal and antiviral activities of benanomicins and their analogues. Kondo S, *et al. J Antibiot.* 1991 **44**(11) 1228-1236.
- 7) Binding of benanomicin A to fungal cells in reference to its fungicidal action. Watanabe M, *et al. J Antibiot.* 1996 **49**(4) 366-373.
- 8) Presence of O-glycosidically linked oligosaccharides in the cell wall mannan of *Candida krusei* purified with Benanomicin A. Kuraoka T, *et al. FEBS Open Bio.* 2019 **9** 129~136.
- 9) Distribution of oligomannosyl side chains in the cell wall mannan of pichia pastoris purified by benanomicin A. Kuraoka T, *et al. Int J Curr Microbiol App Sci.* 2019.8(1) 2926-2935.