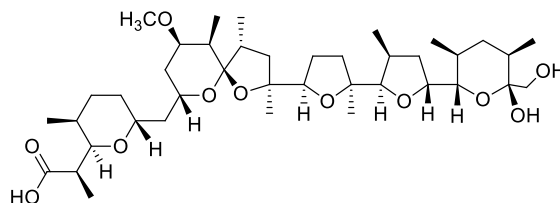


## Nigericin

Code No.: **BIA-N1228**

Pack sizes: **5 mg, 25 mg**



Synonyms : Polyetherin A, Azalomycin M, Helixin C, K 178, X 464

## Specifications

|                   |   |
|-------------------|---|
| CAS #             | : 28380-24-7  |
| Molecular Formula | : C <sub>40</sub> H <sub>68</sub> O <sub>11</sub>                   |
| Molecular Weight  | : 724.9   |
| Source            | : <i>Streptomyces hygroscopicus</i>                                 |
| Appearance        | : White powder  |
| Purity            | : >95% by HPLC  |
| Long Term Storage | : -20°C   |
| Solubility        | : Soluble in ethanol, methanol, DMF or DMSO. Poor water solubility. |

## Application Notes

Nigericin is a polyether antibiotic produced by *Streptomyces*, notably *S. hygroscopicus*, isolated in the 1950s. Its complex structure was finally elucidated in 1968. Nigericin is an ionophore, possessing very high affinity for monovalent cations such as Na<sup>+</sup> and K<sup>+</sup>. Nigericin disrupts membrane potential and Golgi apparatus in mitochondria. Although nigericin can be isolated as the free acid (under acidic conditions), like most ionophores it is extracted into organic solvents and is most conveniently isolated as a salt. In vitro, nigericin has broad biological activity against Gram positive bacteria, fungi, tumor cell lines and some viruses, including HIV. Nigericin is the most common member of the polyether class which are common false positives in in vitro screening bioassays using crude microbial extracts. They are thus important standards for dereplication.

## References

1. Nigericin, a new crystalline antibiotic from an unidentified streptomyces. Harned R.L. et al., *Antibiot. Chemother.* 1951, 1, 594.
2. The structure of nigericin. Steinrauf L.K. et al., *Biochem. Biophys. Res. Commun.* 1968, 33, 29.
3. Nigericin-induced Na<sup>+</sup>/H<sup>+</sup> and K<sup>+</sup>/H<sup>+</sup> exchange in synaptosomes: effect on [3H]GABA release. Rodriguez R. & Sitges M., *Neurochem. Res.* 1996, 21, 889.
4. Nigericin inhibits accumulation of the steroidogenic acute regulatory protein but not steroidogenesis. King S.R. et al., *Mol. Cell. Endocrinol.* 2000, 166, 147.
5. Nigericin inhibits insulin-stimulated glucose transport in 3T3-L1 adipocytes. Chu C.Y. et al., *J. Cell. Biochem.* 2002, 85, 83.
6. Inhibitory effects of polyethers on human immunodeficiency virus replication. Nakamura M., *Antimicrob. Agric. Chemother.* 1992, 36, 492.