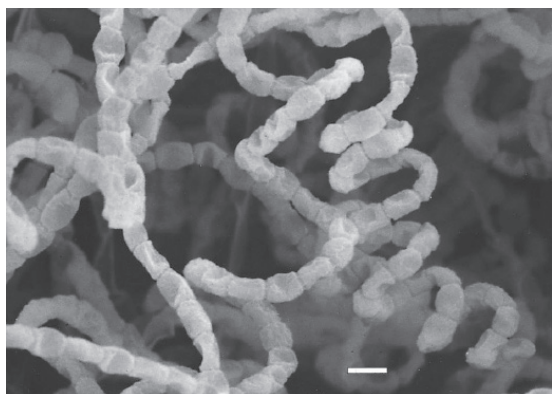


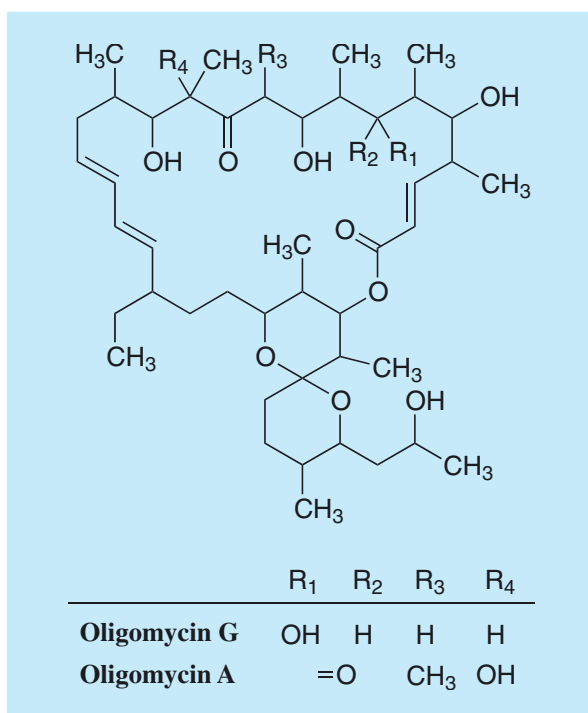
Oligomycin G

1. Discovery, producing organism and structure¹⁾

Oligomycin G was isolated from the culture broth of the actinomycete strain WK-6150 while screening for insecticidal and nematocidal antibiotics. Oligomycin G is a novel oligomycin group 26-membered ring macrolide. It affected the growth of *Artemia salina* and showed nematocidal activity.



Streptomyces sp. WK-6150



2. Physical data (Oligomycin G)

White powder. C₄₄H₇₄O₁₀; mol wt 763.07. Sol. in DMSO, MeOH, acetone, CHCl₃. Insol. in H₂O.

3. Biological activity¹⁾

1) Insecticidal and nematocidal activities

Oligomycin G affected the motility of brine shrimp *Artemia salina* at 0.2 µg/ml and free-living nematodes *Caenorhabditis elegans* at 1.0 µg/ml. Nematocidal activity of oligomycins G and A against *Trichinella spiralis* and *Nippostrongylus brasiliensis* is shown below.

	Concentration	<i>Trichinella spiralis</i>	<i>Nippostrongylus brasiliensis</i>
Oligomycin G	100 µg/ml	2	1
	10	2	1
	1	2	0
	0.1	0	–
Oligomycin A	100 µg/ml	2	0
	10	2	–
	1	2	–
	0.1	0	–

3 = full activity, 2 = partial activity, 1 = weak activity, and 0 = no activity

2) Antimicrobial activity (10 μ g/6 mm disc, paper disc method)

Test organism	Inhibitory zone (mm)	Test organism	Inhibitory zone (mm)
<i>Bacillus subtilis</i> ATCC6633	–	<i>Bacteroides fragilis</i> ATCC23745	–
<i>Staphylococcus aureus</i> ATCC6538p	–	<i>Acholeplasma laidlawii</i> PG8	–
<i>Micrococcus luteus</i> ATCC9341	–	<i>Pyricularia oryzae</i> KF180	29
<i>Mycobacterium smegmatis</i> ATCC607	–	<i>Candida albicans</i> KF1	–
<i>Escherichia coli</i> NIHJ	–	<i>Saccharomyces cerevisiae</i> KF26	–
<i>Pseudomonas aeruginosa</i> IFO3080	–	<i>Aspergillus niger</i> ATCC6275	13
<i>Xanthomonas campestris</i> pv. <i>oryzae</i> KB88	–	<i>Mucor racemosus</i> IFO4581	14

3) Cytotoxicity

The IC₅₀ values of oligomycins G and A against P388 cells were 2.5 ng/ml and 0.65 ng/ml, respectively.

4. Reference

1. [773] Y. Enomoto *et al.*, *J. Antibiot.* **54**, 308-313 (2001)