

-Supporting Information-

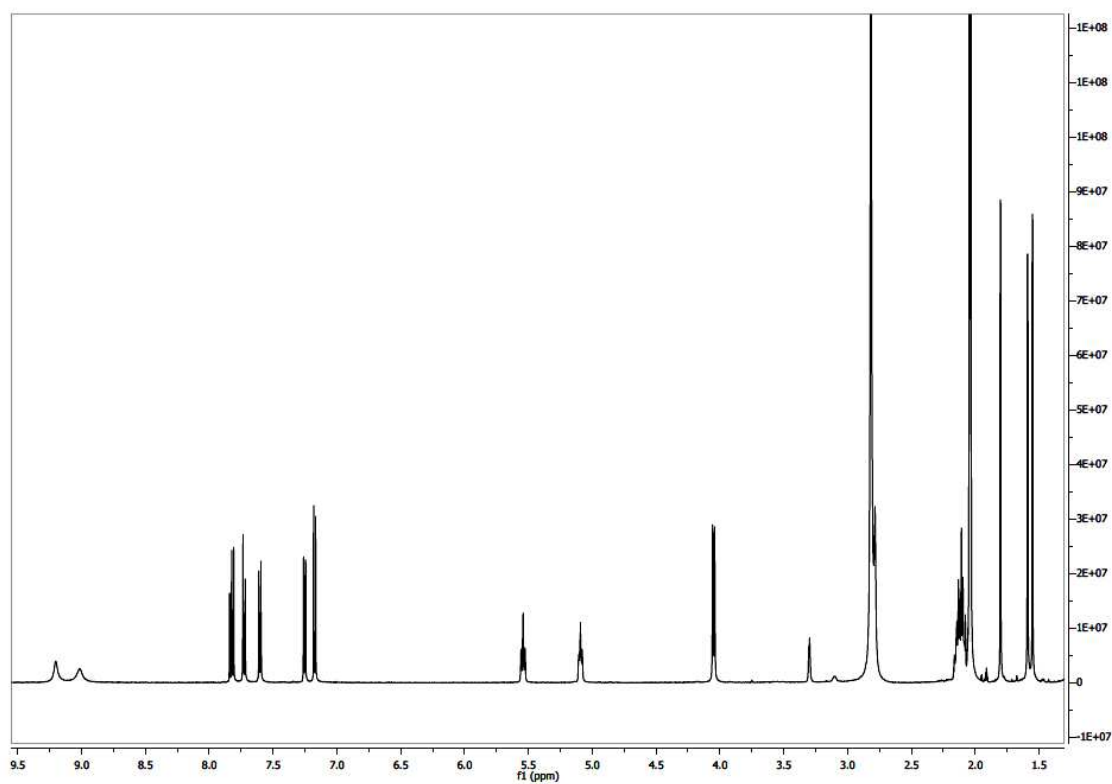
Geranyl-phenazine-diol: an Acetylcholinesterase Inhibitor Produced by a *Streptomyces* Species

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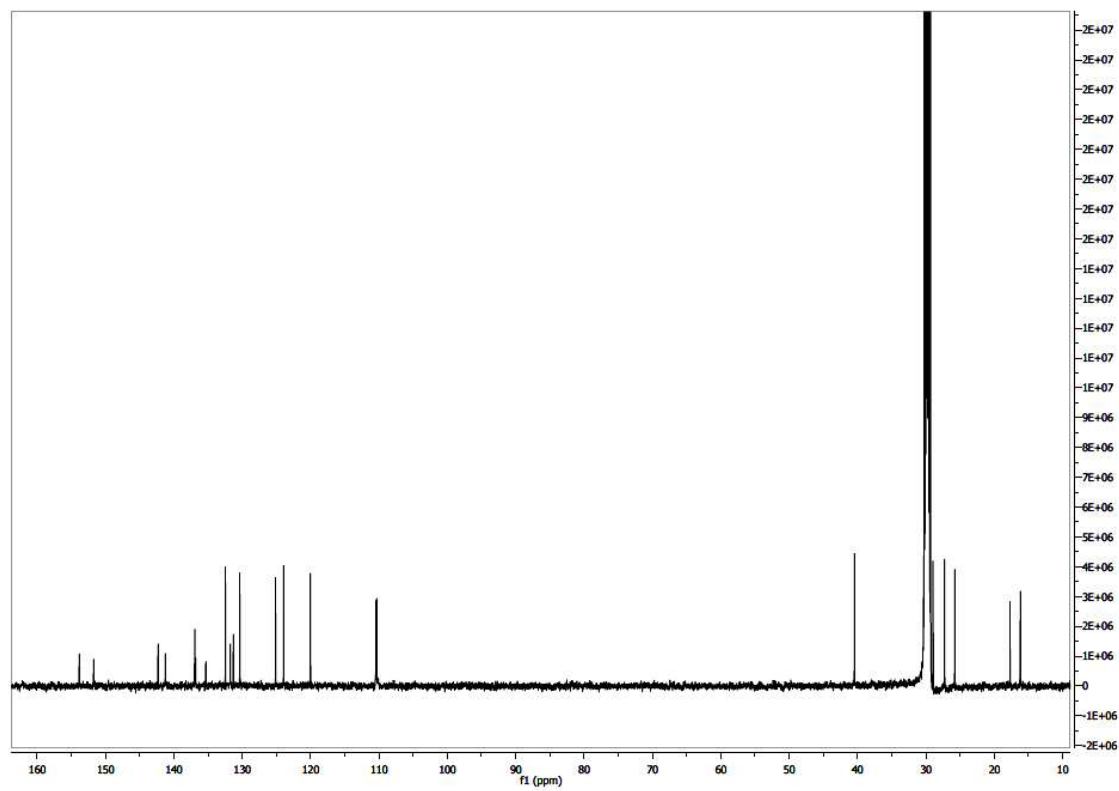
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- S1.** ^1H NMR spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (500 MHz)
- S2.** ^{13}C NMR spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (125 MHz)
- S3.** ^1H - ^1H COSY spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (500 MHz)
- S4.** ^1H - ^{13}C HMBC spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (500 MHz)
- S5.** ^1H NMR spectrum of diacetyl-geranyl-phenazine-diol (**2**) in acetone- d_6 (500 MHz)
- S6.** Detail of the ^1H - ^1H NOESY spectrum of diacetyl-geranyl-phenazine-diol (**2**) in acetone- d_6 (500 MHz)
- S7.** IC_{50} values [μM] for inhibition of acetylcholinesterase activity, growth of *B. subtilis* and fibroblast (KIF) proliferation.
- S8.** Spore chain of *Streptomyces* sp. strain LB173 (scanning electron microscopic photograph)

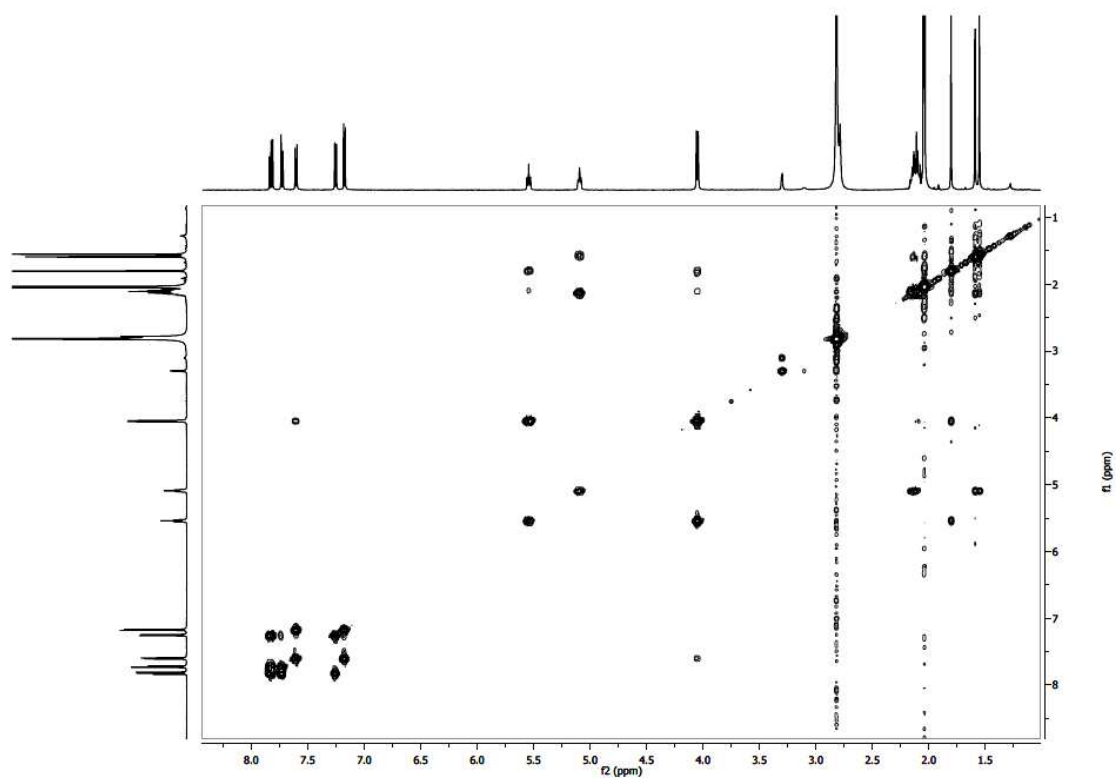
S1. ^1H NMR spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (500 MHz)



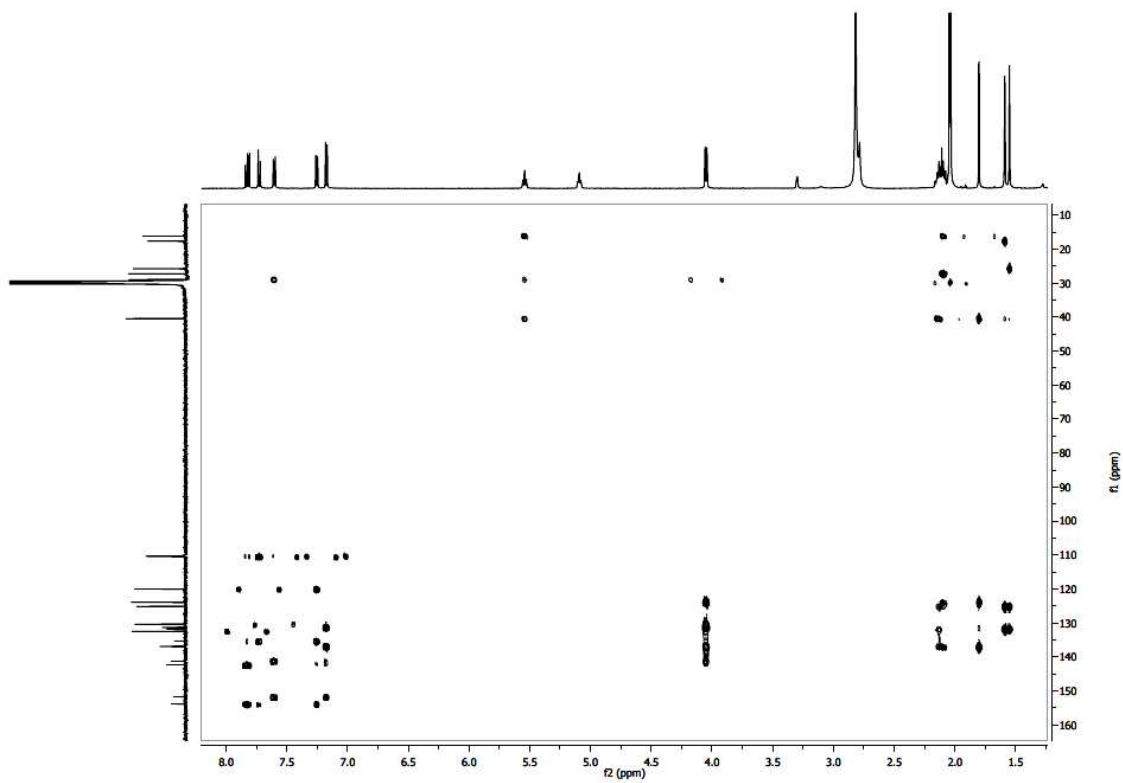
S2. ^{13}C NMR spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (125 MHz)



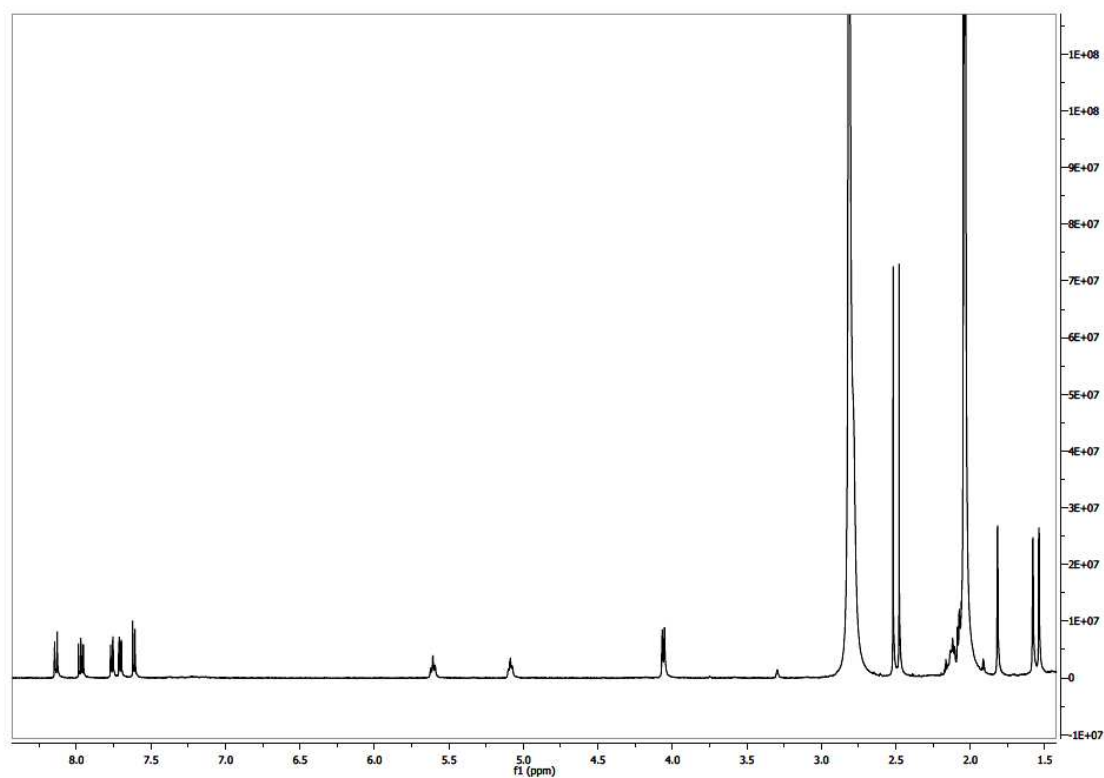
S3. ^1H - ^1H COSY spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (500 MHz)



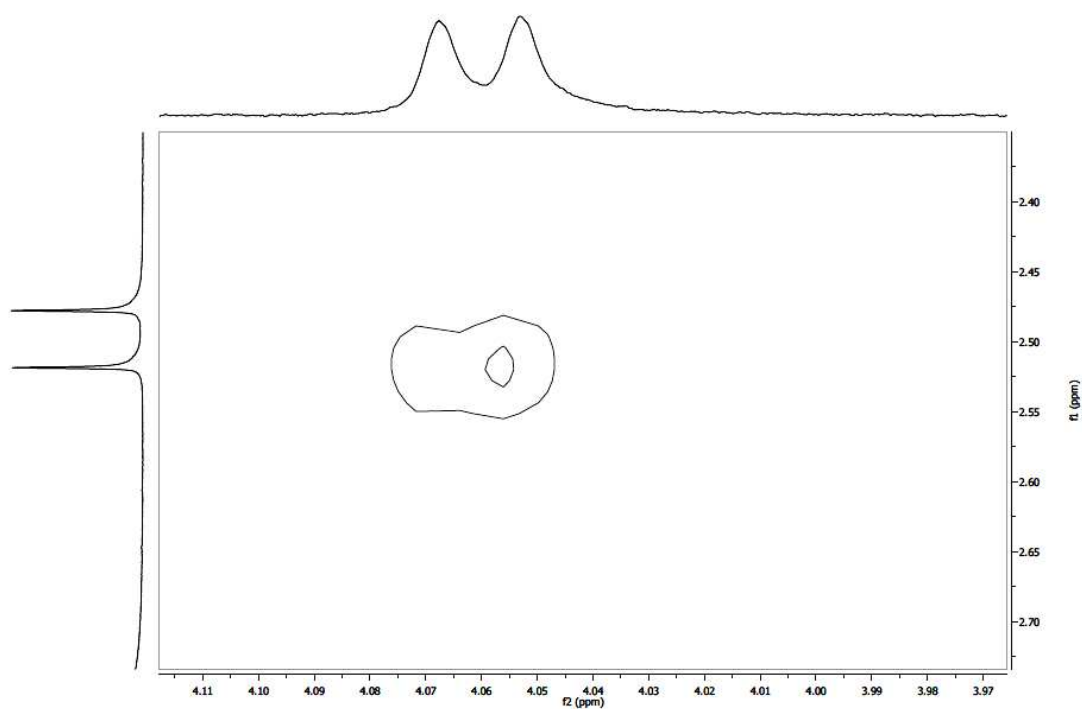
S4. ^1H - ^{13}C HMBC spectrum of geranyl-phenazine-diol (**1**) in acetone- d_6 (500 MHz)



S5. ^1H NMR spectrum of diacetyl-geranyl-phenazine-diol (**2**) in acetone- d_6 (500 MHz)



S6. Detail of the ^1H - ^1H NOESY spectrum of diacetyl-geranyl-phenazine-diol (**2**) in acetone- d_6 (500 MHz)

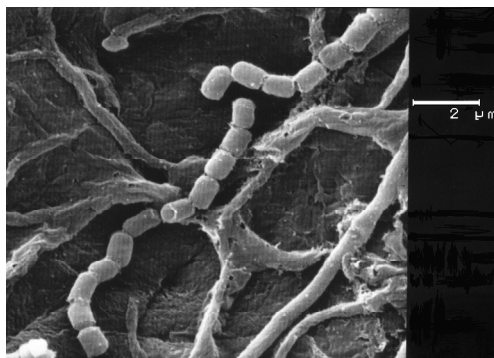


S7. IC₅₀ values [μM] for inhibition of acetylcholinesterase activity, growth of *B. subtilis* and fibroblast (KIF) proliferation.

	AChE	<i>B. subtilis</i>	KIF (fibroblasts)
	IC ₅₀ [μM]		
geranyl-phenazine-diol (1)	2.62 ± 0.35	24 ± 3	>50
diacetyl-geranyl-phenazine-diol (2)	2.01 ± 0.02	13 ± 1	>50
1,6-phenazine-diol	4.52 ± 0.46	22 ± 2	>50
2-hydroxy-phenazine	>50	75 ± 4	>50
phenazine-1-carboxylic acid	>50	>150	>50
endophenazine A	>50	111 ± 2	>10
endophenazine B	>50	>150	>50
huperzine A	0.012 ± 0.001	n. d.	n. d.
chloramphenicol	n. d.	1.45 ± 0.13	n. d.
tamoxifen	n. d.	n. d.	23.75 ± 0.57

n. d.: not determined

S8. Spore chain of *Streptomyces* sp. strain LB173 (scanning electron microscopic photograph)



Morphological characteristics and genetic sequence information of the 16S rRNA gene designated the strain as belonging to the genus *Streptomyces*. The most closely related type strains according to the 16S rRNA gene sequence (1199bp) analysis were *Streptomyces luridiscabiei* S63^T (GenBank/ EMBL/ DDBJ acc. No. AF361784) and *Streptomyces flavogriseus* strain CBS 101.34^T (GenBank/ EMBL/ DDBJ acc. No. AJ494864), both with a sequence similarity of 99.5 %. As can be seen on the scanning electron microscopic picture DB620 produces cylindrical spores with a smooth surface, which fits well to the description of the spores of *Streptomyces luridiscabiei* S63^T.