

Antifungal Activity of Methylxanthines against Grapevine Trunk Diseases

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SUPPLEMENTARY MATERIAL

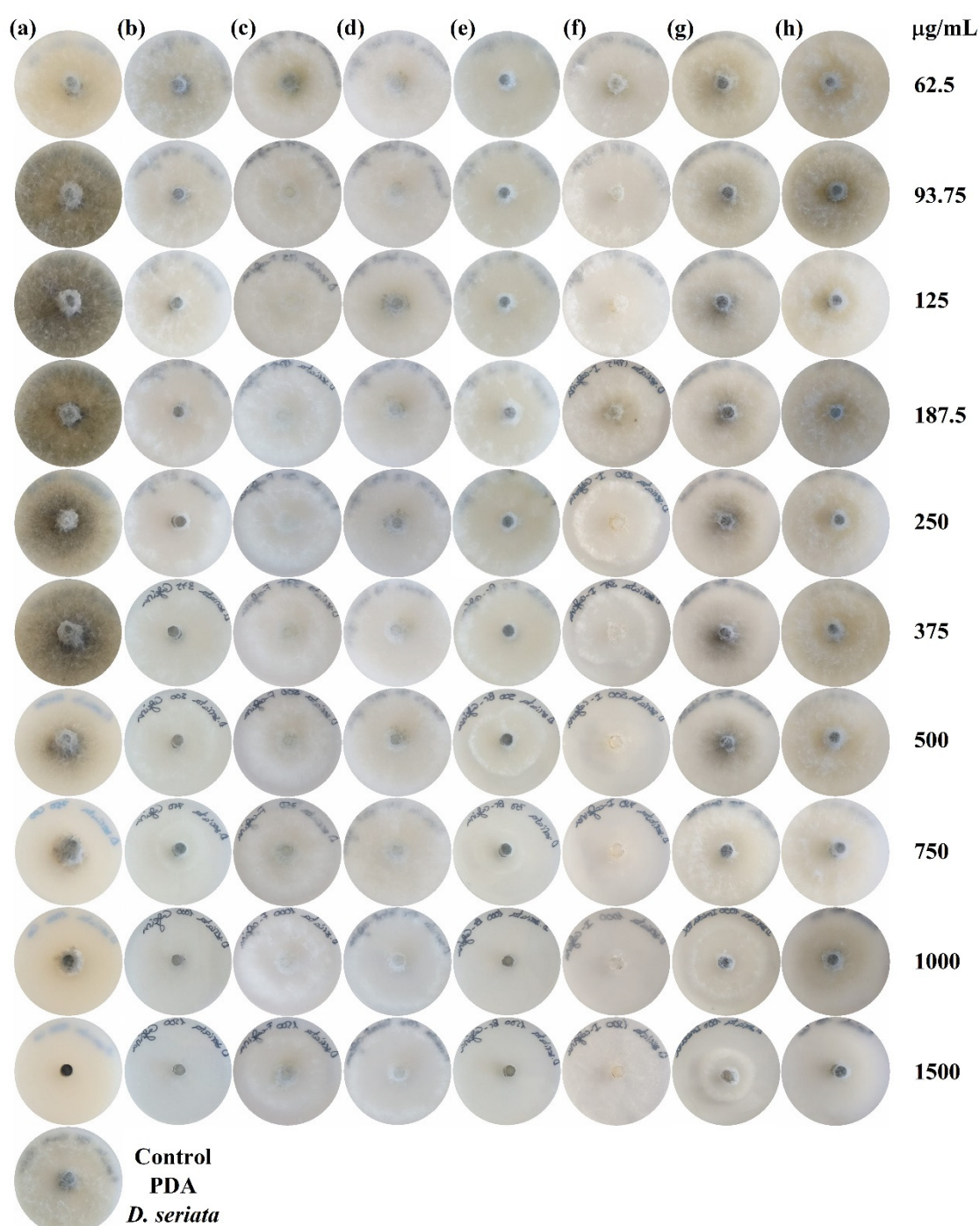


Figure S1. Mycelial growth inhibition of *D. seriata* upon treatment with (a) COS, (b) caffeine, (c) F-phenoxycaffeine, (d) 4F-phenoxycaffeine, (e) Br-caffeine, (f) I-caffeine, (g) imidazole, and (h) theophylline at different concentrations. Only one replicate per treatment and concentration is shown. The control is shown in the bottom left corner.

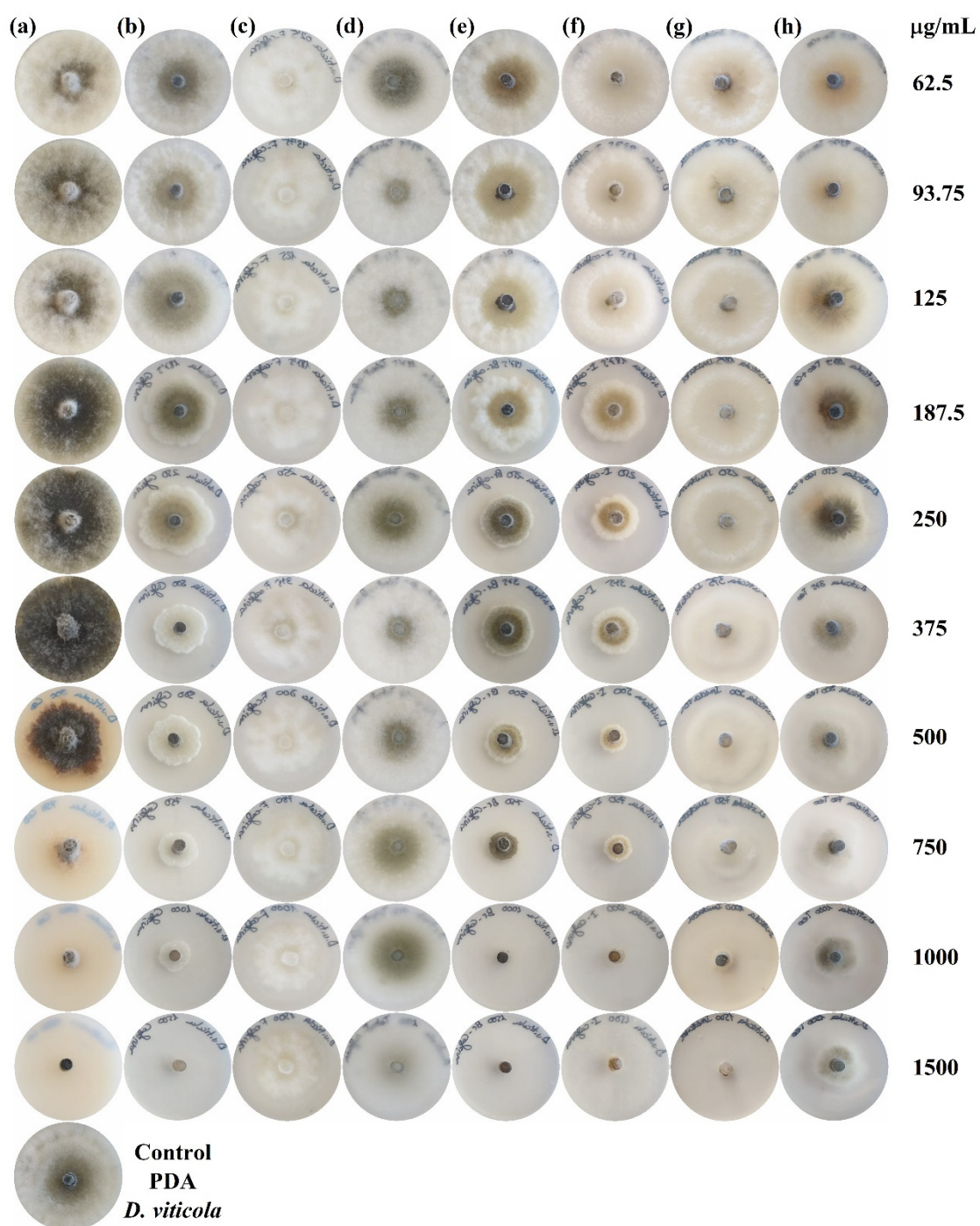


Figure S2. Mycelial growth inhibition of *D. viticola* upon treatment with (a) COS, (b) caffeine, (c) F-phenoxycaffeine, (d) 4F-phenoxycaffeine, (e) Br-caffeine, (f) I-caffeine, (g) imidazole, and (h) theophylline at different concentrations. Only one replicate per treatment and concentration is shown. The control is shown in the bottom left corner.

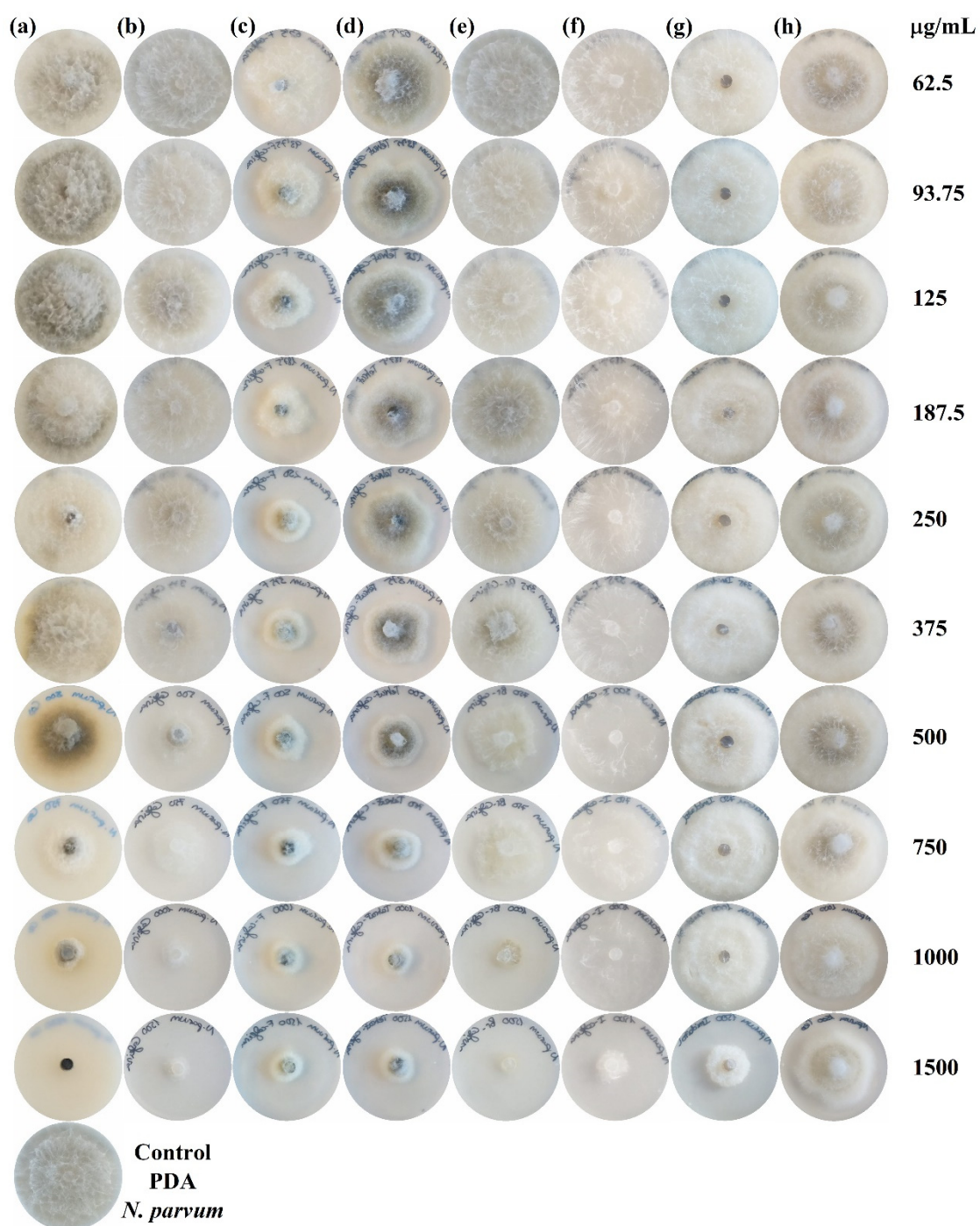


Figure S3. Mycelial growth inhibition of *N. parvum* upon treatment with (a) COS, (b) caffeine, (c) F-phenoxycaffeine, (d) 4F-phenoxycaffeine, (e) Br-caffeine, (f) I-caffeine, (g) imidazole, and (h) theophylline at different concentrations. Only one replicate per treatment and concentration is shown. The control is shown in the bottom left corner.

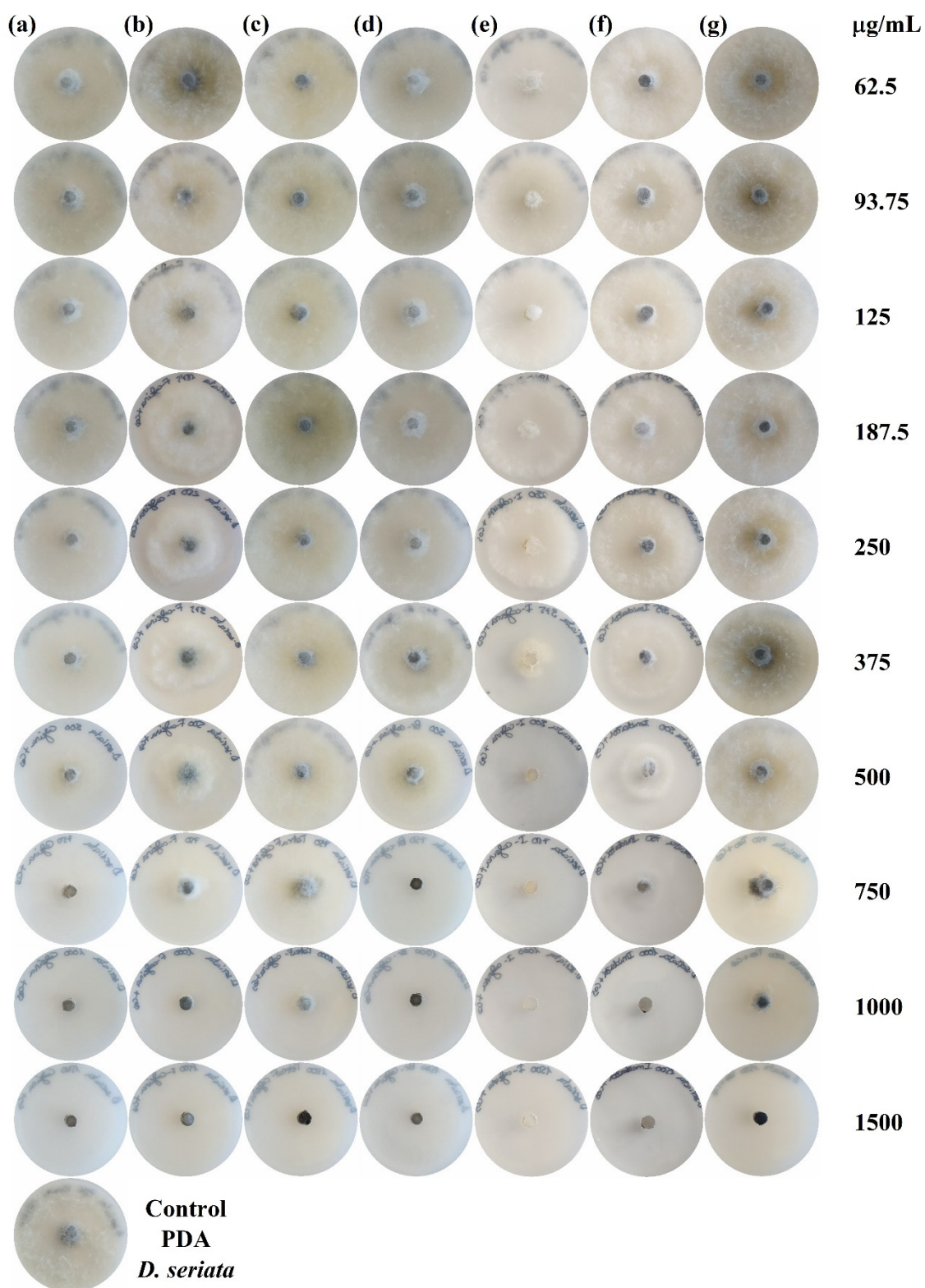


Figure S4. Mycelial growth inhibition of *D. seriata* upon treatment with COS conjugated complexes: (a) COS-caffeine, (b) COS-F-phenoxycaffeine, (c) COS-4F-phenoxycaffeine, (d) COS-Br-caffeine, (e) COS-I-caffeine, (f) COS-imidazole, and (g) COS-theophylline at different concentrations. Only one replicate per treatment and concentration is shown. The control is shown in the bottom left corner.

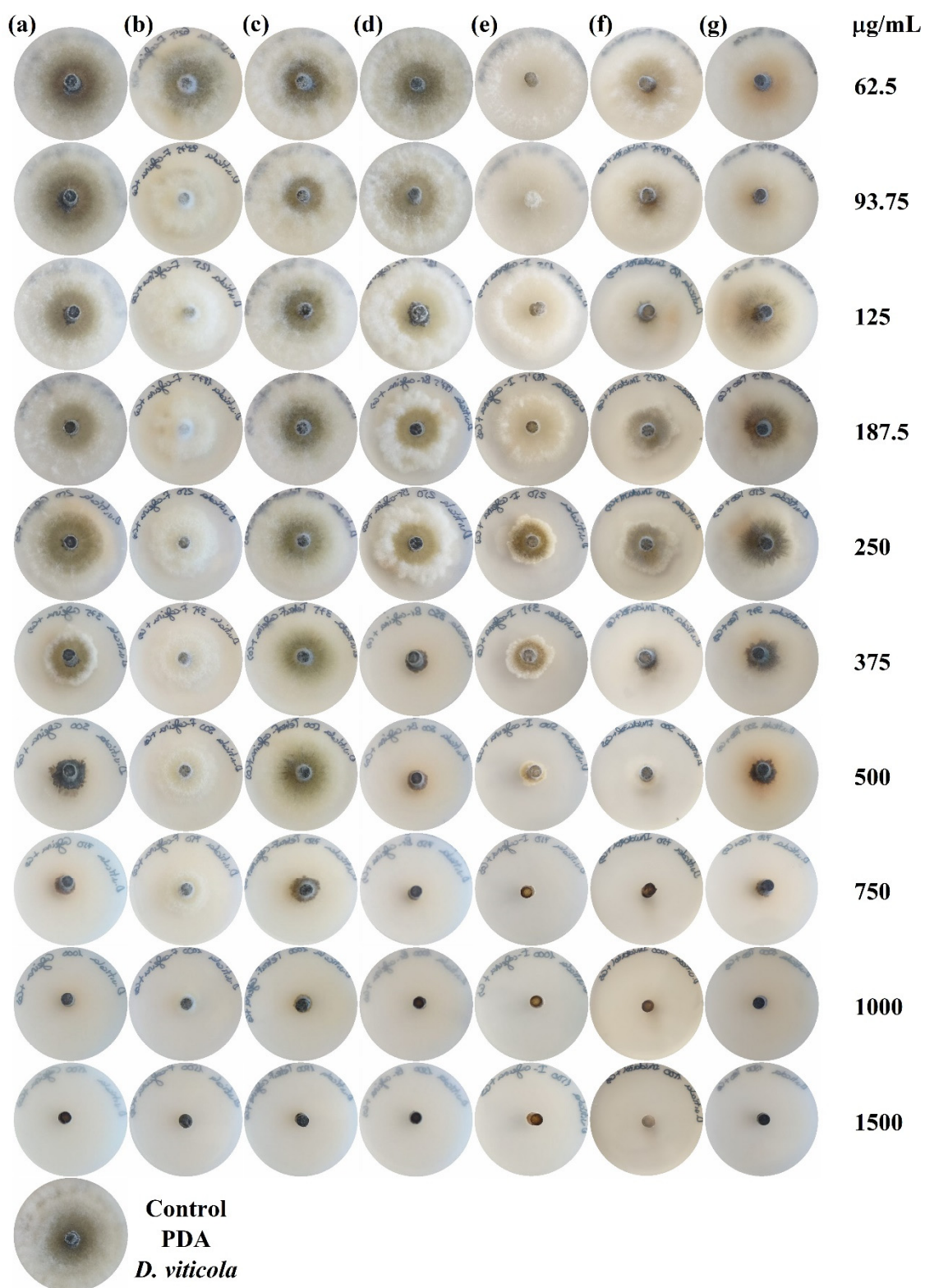


Figure S5. Mycelial growth inhibition of *D. viticola* upon treatment with COS conjugated complexes: (a) COS-caffeine, (b) COS-F-phenoxycaffeine, (c) COS-4F-phenoxycaffeine, (d) COS-Br-caffeine, (e) COS-I-caffeine, (f) COS-imidazole, and (g) COS-theophylline at different concentrations. Only one replicate per treatment and concentration is shown. The control is shown in the bottom left corner.

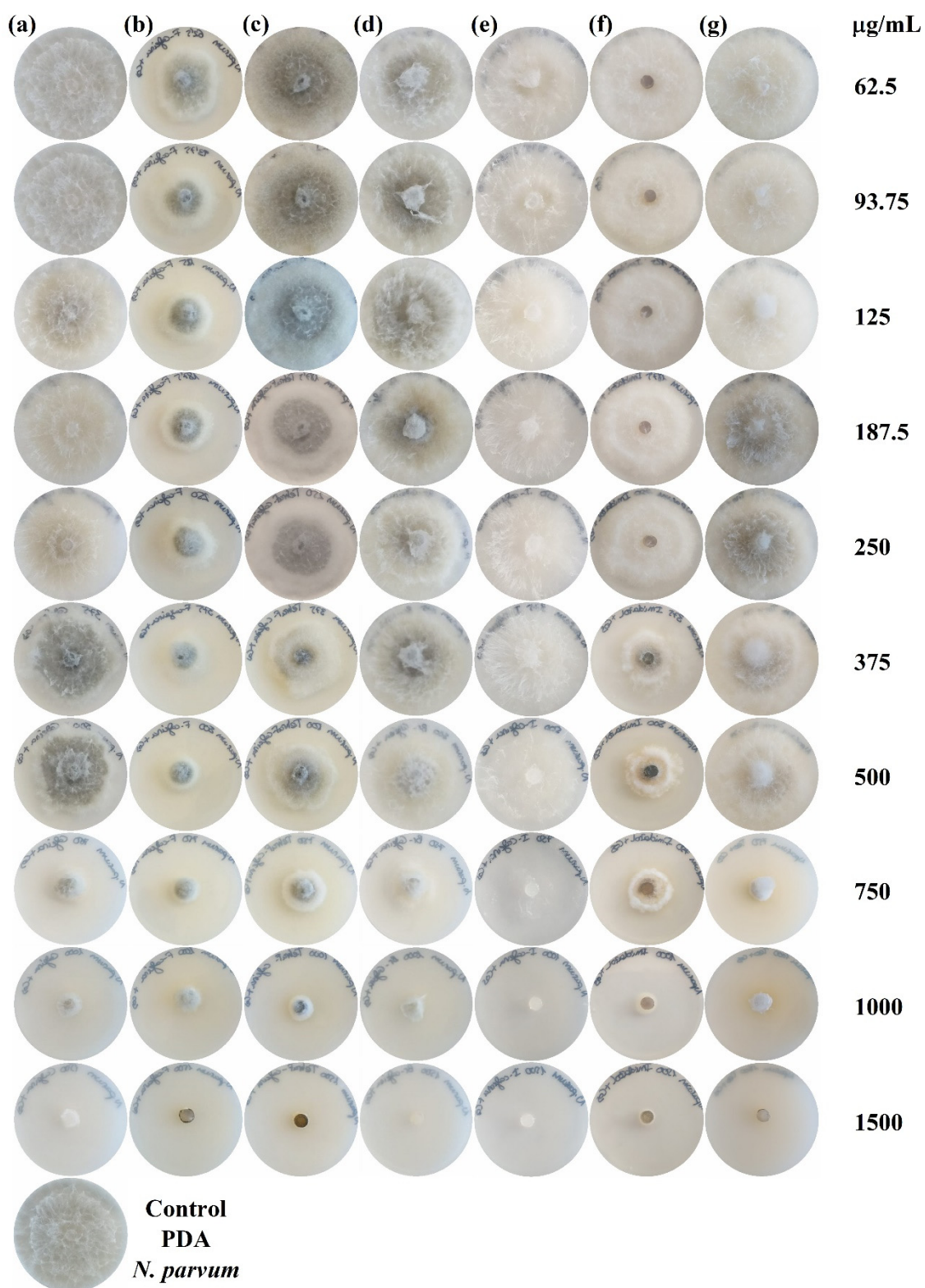


Figure S6. Mycelial growth inhibition of *N. parvum* upon treatment with COS conjugated complexes: (a) COS-caffeine, (b) COS-F-phenoxycaffeine, (c) COS-4F-phenoxycaffeine, (d) COS-Br-caffeine, (e) COS-I-caffeine, (f) COS-imidazole, and (g) COS-theophylline at different concentrations. Only one replicate per treatment and concentration is shown. The control is shown in the bottom left corner.

Table S1. Summary of multiple pairwise comparisons using Tukey’s HSD test for each treatment-concentration combination against each of the three phytopathogenic fungi. The same letters next to the radial growth of the mycelium (average values expressed in mm) indicate that the treatment-concentration combinations are not significantly different at $p < 0.05$. Tukey’s HSD lettered groupings follow the sequence a-z, A-Z, α - ϵ , where ‘a’ indicates the group of treatment-concentration combinations with the highest efficacy and ‘ ϵ ’ the group of least effective treatment-concentration combinations.

<i>D. seriata</i>		<i>D. viticola</i>		<i>N. parvum</i>	
Treatment-concentration	Radial Growth of Mycelium	Treatment-concentration	Radial Growth of Mycelium	Treatment-concentration	Radial Growth of Mycelium
COS-Theophylline-Imidazole-375	75.0 C	4F-Phenoxycaffeine-62.5	75.0 W	COS-Theophylline-Imidazole-93.75	75.0 ϵ
COS-Theophylline-Imidazole-125	75.0 C	COS-Theophylline-Imidazole-62.5	75.0 W	COS-Theophylline-Imidazole-62.5	75.0 ϵ
COS-Theophylline-Imidazole-187.5	75.0 C	COS-Theophylline-62.5	75.0 W	COS-Theophylline-Imidazole-125	75.0 ϵ
COS-Theophylline-Imidazole-250	75.0 C	COS-Theophylline-93.75	75.0 W	COS-I-Caffeine-62.5	75.0 ϵ
COS-I-Caffeine-Imidazole-93.75	75.0 C	COS-4F-Phenoxycaffeine-62.5	75.0 W	COS-Theophylline-62.5	75.0 ϵ
COS-Theophylline-Imidazole-62.5	75.0 C	COS-Br-Caffeine-62.5	75.0 W	COS-Theophylline-93.75	75.0 ϵ
COS-Theophylline-Imidazole-93.75	75.0 C	Theophylline-62.5	75.0 W	COS-Theophylline-187.5	75.0 ϵ
COS-I-Caffeine-Imidazole-62.5	75.0 C	COS-4F-Phenoxycaffeine-93.75	75.0 W	COS-I-Caffeine-93.75	75.0 ϵ
COS-Theophylline-500	75.0 C	COS-Caffeine-62.5	75.0 W	COS-I-Caffeine-125	75.0 ϵ
4F-Phenoxycaffeine-62.5	75.0 C	COS-Caffeine-93.75	75.0 W	COS-I-Caffeine-187.5	75.0 ϵ
COS-Theophylline-250	75.0 C	COS-Caffeine-125	75.0 W	COS-Theophylline-125	75.0 ϵ
COS-Theophylline-375	75.0 C	Theophylline-93.75	75.0 W	COS-Br-Caffeine-93.75	75.0 ϵ
COS-Theophylline-125	75.0 C	Theophylline-125	75.0 W	Theophylline-62.5	75.0 ϵ
COS-Theophylline-187.5	75.0 C	Theophylline-187.5	75.0 W	COS-4F-Phenoxycaffeine-62.5	75.0 ϵ
COS-Theophylline-62.5	75.0 C	I-Caffeine-62.5	75.0 W	COS-4F-Phenoxycaffeine-93.75	75.0 ϵ
COS-Theophylline-93.75	75.0 C	4F-Phenoxycaffeine-250	75.0 W	Theophylline-93.75	75.0 ϵ
COS-Imidazole-62.5	75.0 C	4F-Phenoxycaffeine-93.75	75.0 W	Theophylline-125	75.0 ϵ
COS-Imidazole-93.75	75.0 C	4F-Phenoxycaffeine-125	75.0 W	Br-Caffeine-62.5	75.0 ϵ
COS-Imidazole-125	75.0 C	4F-Phenoxycaffeine-187.5	75.0 W	Br-Caffeine-93.75	75.0 ϵ
COS-Imidazole-187.5	75.0 C	Br-Caffeine-62.5	75.0 W	Br-Caffeine-125	75.0 ϵ
COS-I-Caffeine-125	75.0 C	4F-Phenoxycaffeine-375	75.0 W	COS-Br-Caffeine-62.5	75.0 ϵ
COS-I-Caffeine-62.5	75.0 C	4F-Phenoxycaffeine-500	75.0 W	COS-Caffeine-62.5	75.0 ϵ
COS-I-Caffeine-93.75	75.0 C	Control-0	75.0 W	COS-Caffeine-93.75	75.0 ϵ
4F-Phenoxycaffeine-187.5	75.0 C	COS-125	75.0 W	Imidazole-125	75.0 ϵ
COS-Br-Caffeine-62.5	75.0 C	Caffeine-62.5	75.0 W	Theophylline-187.5	75.0 ϵ
COS-Br-Caffeine-125	75.0 C	COS-62.5	75.0 W	Theophylline-250	75.0 ϵ
COS-Br-Caffeine-187.5	75.0 C	COS-93.75	75.0 W	COS-Caffeine-125	75.0 ϵ
4F-Phenoxycaffeine-93.75	75.0 C	COS-187.5	75.0 W	COS-Caffeine-187.5	75.0 ϵ
4F-Phenoxycaffeine-125	75.0 C	4F-Phenoxycaffeine-750	71.1 V	COS-Caffeine-250	75.0 ϵ
4F-Phenoxycaffeine-375	75.0 C	COS-I-Caffeine-62.5	70.6 UV	Imidazole-93.75	75.0 ϵ
COS-Br-Caffeine-250	75.0 C	COS-250	70.6 UV	Theophylline-375	75.0 ϵ
COS-4F-Phenoxycaffeine-375	75.0 C	COS-Theophylline-125	68.9 TUV	Theophylline-500	75.0 ϵ

COS-Br-Caffeine-93.75	75.0 C	COS-Theophylline-Imidazole-93.75	68.9 TUV	I-Caffeine-62.5	75.0 ε
F-Phenoxycaffeine-125	75.0 C	COS-4F-Phenoxycaffeine-125	68.9 TUV	I-Caffeine-93.75	75.0 ε
COS-4F-Phenoxycaffeine-62.5	75.0 C	Imidazole-62.5	68.9 TUV	I-Caffeine-125	75.0 ε
COS-4F-Phenoxycaffeine-93.75	75.0 C	COS-Br-Caffeine-93.75	68.3 STUV	Imidazole-62.5	75.0 ε
COS-4F-Phenoxycaffeine-125	75.0 C	4F-Phenoxycaffeine-1000	68.3 STUV	I-Caffeine-187.5	75.0 ε
COS-4F-Phenoxycaffeine-187.5	75.0 C	COS-F-Phenoxycaffeine-62.5	67.8 RSTUV	Caffeine-62.5	75.0 ε
COS-4F-Phenoxycaffeine-250	75.0 C	COS-Imidazole-62.5	67.2 QRSTU	Caffeine-93.75	75.0 ε
Caffeine-125	75.0 C	COS-I-Caffeine-93.75	66.7 QRST	Caffeine-125	75.0 ε
Caffeine-187.5	75.0 C	COS-Caffeine-187.5	66.7 QRST	Caffeine-187.5	75.0 ε
Caffeine-250	75.0 C	Caffeine-93.75	66.7 QRST	Caffeine-250	75.0 ε
F-Phenoxycaffeine-62.5	75.0 C	Imidazole-93.75	66.1 QRST	Control-0	75.0 ε
F-Phenoxycaffeine-93.75	75.0 C	Theophylline-250	66.1 QRST	COS-62.5	75.0 ε
Caffeine-62.5	75.0 C	COS-375	66.1 QRST	COS-125	75.0 ε
Caffeine-93.75	75.0 C	COS-Theophylline-187.5	65.6 PQRST	COS-93.75	75.0 ε
COS-250	75.0 C	COS-4F-Phenoxycaffeine-187.5	65.6 PQRST	COS-187.5	75.0 ε
COS-375	75.0 C	Br-Caffeine-93.75	65.0 PQRS	COS-250	75.0 ε
COS-500	75.0 C	COS-I-Caffeine-Imidazole-62.5	64.4 OPQR	Br-Caffeine-187.5	71.1 δ
COS-93.75	75.0 C	4F-Phenoxycaffeine-1500	64.4 OPQR	COS-375	71.1 δ
COS-125	75.0 C	I-Caffeine-93.75	64.4 OPQR	I-Caffeine-250	70.6 χδ
COS-187.5	75.0 C	COS-Theophylline-Imidazole-125	63.9 NOPQ	COS-Theophylline-250	69.4 βχδ
COS-F-Phenoxycaffeine-93.75	75.0 C	F-Phenoxycaffeine-62.5	63.9 NOPQ	COS-Imidazole-62.5	69.4 βχδ
COS-62.5	75.0 C	COS-4F-Phenoxycaffeine-250	62.2 MNOP	COS-4F-Phenoxycaffeine-125	69.4 βχδ
COS-F-Phenoxycaffeine-62.5	75.0 C	Imidazole-125	62.2 MNOP	COS-Theophylline-Imidazole-187.5	68.9 αβχδ
COS-Caffeine-93.75	75.0 C	F-Phenoxycaffeine-93.75	62.2 MNOP	COS-I-Caffeine-250	68.9 αβχδ
COS-Caffeine-125	75.0 C	Caffeine-125	62.2 MNOP	Imidazole-187.5	68.9 αβχδ
COS-Caffeine-187.5	75.0 C	COS-Br-Caffeine-125	61.1 LMNO	I-Caffeine-375	67.8 Ζαβχδ
COS-Caffeine-250	75.0 C	Br-Caffeine-125	61.1 LMNO	COS-Imidazole-93.75	67.2 ΥΖαβχ
COS-Caffeine-375	75.0 C	Theophylline-375	60.6 KLMN	COS-Br-Caffeine-125	67.2 ΥΖαβχ
Theophylline-62.5	75.0 C	F-Phenoxycaffeine-125	59.4 JKLM	Br-Caffeine-250	66.7 ΥΖαβ
Theophylline-250	75.0 C	COS-Theophylline-Imidazole-187.5	58.9 IJKLM	Caffeine-375	66.1 ΥΖαβ
Theophylline-375	75.0 C	COS-Caffeine-250	58.9 IJKLM	COS-Theophylline-Imidazole-250	65.6 XYZα
Theophylline-500	75.0 C	Imidazole-187.5	58.9 IJKLM	COS-Theophylline-375	65.6 XYZα
Theophylline-750	75.0 C	COS-Theophylline-250	57.8 HIJKL	COS-I-Caffeine-375	65.6 XYZα
COS-Caffeine-62.5	75.0 C	I-Caffeine-125	57.8 HIJKL	4F-Phenoxycaffeine-62.5	65.0 WXYZ
Control-0	75.0 C	F-Phenoxycaffeine-187.5	57.8 HIJKL	COS-4F-Phenoxycaffeine-187.5	65.0 WXYZ
Theophylline-93.75	75.0 C	COS-I-Caffeine-125	57.2 GHIJK	Imidazole-250	65.0 WXYZ
Theophylline-125	75.0 C	COS-4F-Phenoxycaffeine-375	57.2 GHIJK	F-Phenoxycaffeine-62.5	65.0 WXYZ
Theophylline-187.5	75.0 C	COS-Imidazole-93.75	56.7 GHIJ	COS-Imidazole-125	64.4 VWXYZ
Imidazole-250	75.0 C	F-Phenoxycaffeine-250	55.6 FGHI	Theophylline-750	64.4 VWXYZ
Imidazole-375	75.0 C	Imidazole-250	55.0 EFGH	Br-Caffeine-375	63.9 UVWXY

4F-Phenoxycaffeine-250	75.0 C	Br-Caffeine-187.5	55.0 EFGH	COS-I-Caffeine-Imidazole-62.5	62.2 TUVWX
Br-Caffeine-62.5	75.0 C	COS-F-Phenoxycaffeine-93.75	54.4 DEFGH	COS-Imidazole-187.5	61.7 STUVW
Br-Caffeine-93.75	75.0 C	F-Phenoxycaffeine-375	53.9 CDEFG	COS-Br-Caffeine-187.5	61.1 ARSTUV
Br-Caffeine-125	75.0 C	F-Phenoxycaffeine-500	52.2 BCDEF	COS-4F-Phenoxycaffeine-250	61.1 ARSTUV
Br-Caffeine-187.5	75.0 C	COS-4F-Phenoxycaffeine-500	51.7 ABCDE	Imidazole-375	60.6 QARSTU
Br-Caffeine-250	75.0 C	COS-I-Caffeine-187.5	51.7 ABCDE	I-Caffeine-500	60.0 PQARST
I-Caffeine-62.5	75.0 C	COS-F-Phenoxycaffeine-125	51.1 zABCD	Br-Caffeine-500	59.4 OPQARST
I-Caffeine-93.75	75.0 C	COS-I-Caffeine-Imidazole-93.75	50.6 yzABC	COS-Imidazole-250	58.9 OPQARST
Imidazole-62.5	75.0 C	COS-Theophylline-Imidazole-250	50.6 yzABC	COS-Br-Caffeine-250	58.9 OPQARST
Imidazole-93.75	75.0 C	COS-500	50.0 yzAB	COS-Theophylline-500	58.3 OPQARS
Imidazole-125	75.0 C	Imidazole-375	48.9 xyzAB	Imidazole-500	57.8 NOPQAR
Imidazole-187.5	75.0 C	COS-Theophylline-375	48.9 xyzAB	COS-Theophylline-Imidazole-375	57.2 MNOPQ
4F-Phenoxycaffeine-500	75.0 C	F-Phenoxycaffeine-750	48.9 xyzAB	COS-I-Caffeine-Imidazole-93.75	57.2 MNOPQ
4F-Phenoxycaffeine-750	75.0 C	Theophylline-500	48.3 xyzA	4F-Phenoxycaffeine-93.75	57.2 MNOPQ
I-Caffeine-125	71.1 B	COS-Br-Caffeine-187.5	47.8 xyz	Imidazole-750	56.7 LMNOP
4F-Phenoxycaffeine-1000	70.6 B	COS-F-Phenoxycaffeine-187.5	47.2 xy	Theophylline-1000	56.7 LMNOP
F-Phenoxycaffeine-187.5	69.4 AB	Caffeine-187.5	47.2 xy	COS-500	56.1 LMNO
Imidazole-500	69.4 AB	Imidazole-500	46.1 wx	COS-Caffeine-375	54.4 KLMN
COS-Imidazole-250	68.9 AB	F-Phenoxycaffeine-1000	46.1 wx	Imidazole-1000	53.9 JKLM
COS-F-Phenoxycaffeine-125	68.9 AB	COS-Imidazole-125	46.1 wx	COS-Br-Caffeine-375	53.3 IJKL
Theophylline-1000	68.9 AB	COS-F-Phenoxycaffeine-250	43.3 vw	COS-I-Caffeine-500	53.3 IJKL
Br-Caffeine-375	67.2 zA	F-Phenoxycaffeine-1500	42.2 uv	Theophylline-1500	52.2 IJK
F-Phenoxycaffeine-250	67.2 zA	Caffeine-250	41.7 uv	4F-Phenoxycaffeine-125	51.7 HIJK
COS-Br-Caffeine-375	67.2 zA	COS-F-Phenoxycaffeine-375	41.1 uv	I-Caffeine-750	50.6 GHIJ
COS-4F-Phenoxycaffeine-500	67.2 zA	Theophylline-750	40.6 uv	COS-4F-Phenoxycaffeine-375	50.0 FGHI
COS-I-Caffeine-187.5	66.1 yz	I-Caffeine-187.5	40.0 uv	COS-Caffeine-500	48.3 EFGH
COS-Theophylline-Imidazole-500	66.1 yz	COS-Imidazole-187.5	39.4 tu	COS-Theophylline-Imidazole-500	47.2 DEFG
4F-Phenoxycaffeine-1500	65.6 xyz	COS-F-Phenoxycaffeine-500	36.1 st	4F-Phenoxycaffeine-187.5	46.7 CDEF
F-Phenoxycaffeine-375	64.4 xy	Br-Caffeine-250	35.6 s	COS-F-Phenoxycaffeine-62.5	45.6 BCDE
Imidazole-750	63.9 wxy	COS-Imidazole-250	35.6 s	4F-Phenoxycaffeine-250	44.4 BCD
Theophylline-1500	63.3 vwx	COS-Br-Caffeine-250	34.4 rs	COS-Br-Caffeine-500	43.9 ABCD
Caffeine-375	61.7 uvw	Imidazole-750	33.3 rs	Br-Caffeine-750	43.3 zABC
F-Phenoxycaffeine-500	61.1 tuv	Caffeine-375	32.8 rs	COS-I-Caffeine-Imidazole-125	42.8 zAB
I-Caffeine-187.5	59.4 stu	COS-Caffeine-375	32.8 rs	COS-Theophylline-Imidazole-750	42.2 yzAB
COS-I-Caffeine-Imidazole-125	58.9 rst	Br-Caffeine-375	31.7 qr	COS-4F-Phenoxycaffeine-500	40.6 yzA
F-Phenoxycaffeine-750	58.9 rst	COS-I-Caffeine-Imidazole-125	31.7 qr	COS-I-Caffeine-Imidazole-187.5	40.0 xyz
COS-F-Phenoxycaffeine-187.5	57.2 qrs	Theophylline-1000	28.9 pq	COS-F-Phenoxycaffeine-93.75	40.0 xyz
COS-I-Caffeine-250	56.7 pqr	COS-Imidazole-375	28.3 pq	4F-Phenoxycaffeine-375	38.9 xy
I-Caffeine-250	55.6 pq	I-Caffeine-250	27.8 op	F-Phenoxycaffeine-93.75	38.9 xy
F-Phenoxycaffeine-1000	54.4 op	Caffeine-500	27.2 op	I-Caffeine-1000	36.7 wx

COS-Imidazole-375	54.4 op	COS-I-Caffeine-250	27.2 op	Caffeine-500	33.9 vw
Imidazole-1000	54.4 op	COS-Theophylline-500	27.2 op	COS-F-Phenoxycaffeine-125	33.9 vw
Caffeine-500	52.2 no	COS-Theophylline-Imidazole-375	26.7 nop	COS-Imidazole-375	33.9 vw
I-Caffeine-375	51.7 mn	COS-F-Phenoxycaffeine-750	25.6 mnop	F-Phenoxycaffeine-125	32.2 uv
F-Phenoxycaffeine-1500	50.6 mn	COS-Caffeine-500	24.4 mno	COS-F-Phenoxycaffeine-187.5	31.1 tuv
Br-Caffeine-500	50.6 mn	Theophylline-1500	24.4 mno	COS-Br-Caffeine-750	31.1 tuv
COS-Br-Caffeine-500	50.0 mn	I-Caffeine-375	23.3 mn	COS-Imidazole-500	30.6 tuv
COS-F-Phenoxycaffeine-250	49.4 m	Br-Caffeine-500	22.8 lm	Caffeine-750	30.0 tu
COS-F-Phenoxycaffeine-375	46.1 l	COS-I-Caffeine-375	22.2 klm	4F-Phenoxycaffeine-500	30.0 tu
COS-I-Caffeine-Imidazole-187.5	45.0 l	COS-I-Caffeine-Imidazole-187.5	19.4 jkl	COS-750	29.4 stu
COS-F-Phenoxycaffeine-500	36.7 k	Caffeine-750	18.9 ijk	COS-F-Phenoxycaffeine-250	29.4 stu
COS-Imidazole-500	35.0 jk	COS-Br-Caffeine-375	18.9 ijk	F-Phenoxycaffeine-187.5	28.3 rst
I-Caffeine-500	33.9 ij	COS-Imidazole-500	17.2 hij	Imidazole-1500	26.1 qrs
Imidazole-1500	33.9 ij	COS-750	16.7 hij	COS-F-Phenoxycaffeine-375	25.6 pqr
Caffeine-750	32.8 ij	COS-4F-Phenoxycaffeine-750	15.6 ghi	F-Phenoxycaffeine-250	25.0 opqr
COS-I-Caffeine-Imidazole-250	32.2 i	COS-Theophylline-Imidazole-500	15.6 ghi	COS-I-Caffeine-750	25.0 opqr
COS-Caffeine-500	32.2 i	Caffeine-1000	13.9 fgh	COS-Imidazole-750	24.4 nopq
COS-4F-Phenoxycaffeine-750	25.6 h	Br-Caffeine-750	12.8 efg	4F-Phenoxycaffeine-750	23.9 nopq
Caffeine-1000	23.9 h	I-Caffeine-500	12.8 efg	F-Phenoxycaffeine-375	23.9 nopq
COS-I-Caffeine-375	21.1 g	COS-F-Phenoxycaffeine-1000	12.8 efg	F-Phenoxycaffeine-500	22.2 mnop
COS-750	20.6 fg	I-Caffeine-750	10.6 def	COS-Caffeine-750	22.2 mnop
COS-Imidazole-750	20.6 fg	COS-I-Caffeine-500	10.0 cde	COS-4F-Phenoxycaffeine-750	21.7 mno
COS-Theophylline-Imidazole-750	20.0 efg	Imidazole-1000	7.8 bcd	COS-1000	21.1 mn
COS-F-Phenoxycaffeine-750	18.9 efg	COS-Caffeine-750	7.8 bcd	F-Phenoxycaffeine-750	20.0 lm
I-Caffeine-750	18.3 ef	COS-Theophylline-750	7.8 bcd	COS-F-Phenoxycaffeine-500	20.0 lm
COS-Theophylline-750	17.8 e	COS-I-Caffeine-Imidazole-250	7.8 bcd	COS-I-Caffeine-Imidazole-250	19.4 lm
COS-1000	15.0 d	I-Caffeine-1000	7.2 bcd	4F-Phenoxycaffeine-1000	17.2 kl
COS-Theophylline-1000	12.2 c	COS-4F-Phenoxycaffeine-1000	7.2 bcd	F-Phenoxycaffeine-1000	17.2 kl
COS-I-Caffeine-Imidazole-375	12.2 c	COS-Br-Caffeine-500	6.7 bc	Br-Caffeine-1000	16.7 kl
I-Caffeine-1000	7.2 b	I-Caffeine-1500	5.6 b	F-Phenoxycaffeine-1500	15.6 jk
COS-4F-Phenoxycaffeine-1000	7.2 b	COS-1000	4.7 b	COS-I-Caffeine-Imidazole-375	15.6 jk
Br-Caffeine-750	6.7 b	Br-Caffeine-1000	0.0 a	4F-Phenoxycaffeine-1500	15.0 jk
Caffeine-1500	0.0 a	COS-1500	0.0 a	Caffeine-1000	14.4 ijk
COS-1500	0.0 a	Br-Caffeine-1500	0.0 a	I-Caffeine-1500	13.9 hijk
Br-Caffeine-1000	0.0 a	Caffeine-1500	0.0 a	COS-Theophylline-Imidazole-1000	12.8 ghij
Br-Caffeine-1500	0.0 a	COS-Caffeine-1000	0.0 a	COS-Caffeine-1000	12.2 fghij
I-Caffeine-1500	0.0 a	COS-Caffeine-1500	0.0 a	COS-Theophylline-750	11.1 efghi
COS-Caffeine-750	0.0 a	Imidazole-1500	0.0 a	COS-F-Phenoxycaffeine-750	10.6 defgh
COS-Caffeine-1000	0.0 a	COS-4F-Phenoxycaffeine-1500	0.0 a	Caffeine-1500	9.4 cdefg
COS-Caffeine-1500	0.0 a	COS-F-Phenoxycaffeine-1500	0.0 a	COS-4F-Phenoxycaffeine-1000	8.9 bcdef

COS-F-Phenoxycaffeine-1000	0.0 a	COS-Br-Caffeine-750	0.0 a	COS-Br-Caffeine-1000	8.3 bcde
COS-F-Phenoxycaffeine-1500	0.0 a	COS-Br-Caffeine-1000	0.0 a	COS-Caffeine-1500	7.2 bcd
COS-4F-Phenoxycaffeine-1500	0.0 a	COS-Br-Caffeine-1500	0.0 a	COS-Imidazole-1000	7.2 bcd
COS-Br-Caffeine-750	0.0 a	COS-I-Caffeine-1500	0.0 a	Br-Caffeine-1500	6.1 bc
COS-Br-Caffeine-1000	0.0 a	COS-I-Caffeine-750	0.0 a	COS-Theophylline-1000	6.1 bc
COS-Br-Caffeine-1500	0.0 a	COS-I-Caffeine-1000	0.0 a	COS-I-Caffeine-Imidazole-500	6.1 bc
COS-I-Caffeine-500	0.0 a	COS-Imidazole-750	0.0 a	COS-F-Phenoxycaffeine-1000	5.6 b
COS-I-Caffeine-750	0.0 a	COS-Theophylline-1000	0.0 a	COS-1500	0.0 a
COS-I-Caffeine-1000	0.0 a	COS-Imidazole-1000	0.0 a	COS-F-Phenoxycaffeine-1500	0.0 a
COS-I-Caffeine-1500	0.0 a	COS-Imidazole-1500	0.0 a	COS-4F-Phenoxycaffeine-1500	0.0 a
COS-Imidazole-1000	0.0 a	COS-Theophylline-1500	0.0 a	COS-Br-Caffeine-1500	0.0 a
COS-Imidazole-1500	0.0 a	COS-I-Caffeine-Imidazole-375	0.0 a	COS-I-Caffeine-1500	0.0 a
COS-I-Caffeine-Imidazole-500	0.0 a	COS-I-Caffeine-Imidazole-500	0.0 a	COS-I-Caffeine-1000	0.0 a
COS-Theophylline-1500	0.0 a	COS-I-Caffeine-Imidazole-1000	0.0 a	COS-Imidazole-1500	0.0 a
COS-I-Caffeine-Imidazole-1000	0.0 a	COS-I-Caffeine-Imidazole-750	0.0 a	COS-I-Caffeine-Imidazole-1500	0.0 a
COS-I-Caffeine-Imidazole-750	0.0 a	COS-I-Caffeine-Imidazole-1500	0.0 a	COS-Theophylline-1500	0.0 a
COS-I-Caffeine-Imidazole-1500	0.0 a	COS-Theophylline-Imidazole-750	0.0 a	COS-I-Caffeine-Imidazole-750	0.0 a
COS-Theophylline-Imidazole-1500	0.0 a	COS-Theophylline-Imidazole-1500	0.0 a	COS-I-Caffeine-Imidazole-1000	0.0 a
COS-Theophylline-Imidazole-1000	0.0 a	COS-Theophylline-Imidazole-1000	0.0 a	COS-Theophylline-Imidazole-1500	0.0 a
Pr > F(Model)	< 0.0001	Pr > F(Model)	< 0.0001	Pr > F(Model)	< 0.0001
Significant	Yes	Significant	Yes	Significant	Yes