

Original Article

ANTIMICROBIAL AND ANTIOXIDANT ACTIVITIES OF SOME NEWLY SYNTHESIZED BENZENE-1, 3-DIOL CONGENERS AND THEIR CHARACTERIZATION

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Antibacterial statistical analysis of Benzene-1, 3-diol congeners

Comp	mean±SD								
	S. mutans	B. circulans	S. flexneri	E. coli	P. aeruginosa	K. pneumoniae	B. subtilis	A. baumannii	S. aureus'
4a	13±1.67	-	16.67±1.51	17±2.28	15±1.67	17.67±2.07	17.5±3.08	17.17±2.14	13.5±1.98
4b	29.17±1.33	22.83±1.33	13.83±1.84	23.67±1.97	22.33±1.63	29±1.27	-	21.67±1.21	22.33±1.51
4c	26.67±2.34	18.83±2.64	22.67±1.51	26.5±2.51	25.67±1.63	26.67±0.82	24±2.1	26.17±2.86	26.67±0.82
4d	12.67±1.37	19.83±3.92	14.17±1.6	13.5±1.23	16.33±1.86	13.5±1.38	16.67±1.51	16.67±1.37	15.33±2.16
4e	31.33±2.34	28.17±1.6	24±1.79	24±1.41	26.83±2.86	17.83±1.94	26.83±2.04	22.33±4.13	24±2
4f	29.5±3.33	27.17±1.17	23±1.27	26.17±2.32	23±1.27	22.33±2.07	15.83±4.67	19.33±2.34	27.83±1.84
RA	28±0.63	23.83±1.84	20.33±1.63	22.33±1.51	20.67±1.37	20.83±2.79	19.67±2.16	28.67±1.51	22±2
Total	24.33±7.71	20.1±9.12	19.24±4.3	21.88±4.9	21.4±4.49	21.12±5.35	17.21±8.4	21.71±4.75	21.67±5.34
ANOVA 'p' value	0	0	0	0	0	0	0	0	0

Multiple comparisons

Comp	S. mutans	B. circulans	S. flexneri	E. coli	P. aeruginosa	K. pneumoniae	B. subtilis	A. baumannii	S. aureus'											
										I	J	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE
4a	R	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	-	1	-	1
a	A	15±1.17	23.83±1.22	3.67±0.92	5.33±1.12	5.67±1.05	3.17±1.07	2.17±1.49	11.5±1.4	4	1	1	1	1	1	1	1	1	1	1
4b	R	1.17±1.1	-1±1.22	-	1.33±1.12	1.67±1.05	8.17±1.07	-	-7±1.4	1	1	1	1	1	1	1	1	1	1	1
b	A	7	5	8	2	7	2	49	19.67±1.49	1	1	1	1	1	1	1	1	1	1	1
4c	R	-	-5±1.22	2.33±0.92	4.17±1.12	5±1.05	5.83±1.07	4.33±1.4	-2.5±1.4	1	1	1	1	1	1	1	1	1	1	1
c	A	7	9	4	12	0	0	9	2	1	1	1	1	1	1	1	1	1	1	1
4d	R	-	-4±1.22	6.17±0.92	8.83±1.12	4.33±1.05	7.33±1.07	-3±1.49	-12±1.4	1	1	1	1	1	1	1	1	1	1	1
d	A	17	1	1	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4e	R	3.33±1.1	4.33±1.2	3.67±0.92	1.67±1.12	6.17±1.05	-3±1.07	7.17±1.4	6.33±1.4	0	1	1	1	1	1	1	1	1	1	1
e	A	2	2	0	12	5	0	9	4	1	1	1	1	1	1	1	1	1	1	1
4f	R	1.5±1.17	3.33±1.2	2.67±0.92	3.83±1.12	2.33±1.05	1.5±1.0	-	9.33±1.4	0.3	0.2	1	1	1	1	1	1	1	1	1
f	A	3	2	2	12	7	7	9	4	3	8	8	9	4	1	1	1	1	1	1

Antifungal statistical analysis benzene-1, 3-diol congeners

Comp	mean±SD				
	A. niger	T. rubrum	C. albicans	C. glabrata	C. neoformans
4a	21±2.1	15.17±1.72	18.67±1.51	13±1.79	20.5±1.76
4b	19.17±2.32	15.17±1.33	29.17±1.33	14.83±1.84	31.33±2.34
4c	21.67±1.63	15.17±1.33	18.5±1.38	12.83±1.17	27±1.1
4d	19.5±1.64	14.83±1.6	20.67±1.37	12.83±1.33	25.17±2.23
4e	23.67±1.63	19.33±1.97	18.5±2.81	21.17±1.33	28.83±1.6
4f	23±1.79	18.17±0.75	11.83±1.84	21.17±0.98	30.33±0.82
RA	19±0.63	16.67±0.82	26±1.67	19±0.63	27.67±1.63
Total	21±2.39	16.36±2.12	20.48±5.55	16.4±3.87	27.26±3.75
ANOVA 'p' value	0	0	0	0	0

Multiple comparisons												
Comp		A. niger		T. rubrum		C. albicans		C. glabrata		C. neoformans		
I	J	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	p	Mean Difference (I-J)±SE	P	
4a	RA	2±1.01	0.11	-1.5±0.82	1	-7.33±1.02	1	-6±0.78	1	-7.17±0.99	1	
4b	RA	0.17±1.01	0.81	-1.5±0.82	1	3.17±1.02*	0.01	-4.17±0.78	1	3.67±0.99*	0	
4c	RA	2.67±1.01*	0.03	-1.5±0.82	1	-7.5±1.02	1	-6.17±0.78	1	-0.67±0.99	0.97	
4d	RA	0.5±1.01	0.68	-1.83±0.82	1	-5.33±1.02	1	-6.17±0.78	1	-2.5±0.99	1	
4e	RA	4.67±1.01*	0	2.67±0.82*	0.01	-7.5±1.02	1	2.17±0.78*	0.02	1.17±0.99	0.37	
4f	RA	4±1.01*	0	1.5±0.82	0.15	-14.17±1.02	1	2.17±0.78*	0.02	2.67±0.99*	0.03	

Summarized antibacterial statistical analysis of benzene-1, 3-diol congeners provided in the MS

Comp.	A. baumannii	E. coli	S. flexneri	P. aeruginosa	K. pneumonia	B. subtilis	B. circulans	S. mutans	S. aureus
4a	-11.5±1.4	-5.33±1.12	-3.67±0.92	-5.67±1.05	-3.17±1.07	-2.17±1.49	-	-15±1.17	-8.5±1.04
4b	-7±1.4	1.33±1.12	-6.5±0.92	1.67±1.05	8.17±1.07*	-	-1±1.22	1.17±1.17	0.33±1.04
4c	-2.5±1.4	4.17±1.12*	2.33±0.92*	5±1.05*	5.83±1.07*	4.33±1.49*	-5±1.22	-1.33±1.17	4.67±1.04*
4d	-12±1.4	-8.83±1.12	-6.17±0.92	-4.33±1.05	-7.33±1.07	-3±1.49	-4±1.22	-15.33±1.17	-6.67±1.04
4e	-6.33±1.4	1.67±1.12	3.67±0.92*	6.17±1.05*	-3±1.07	7.17±1.49*	4.33±1.22*	3.33±1.17*	2±1.04
4f	-9.33±1.4	3.83±1.12*	2.67±0.92*	2.33±1.05	1.5±1.07	-3.83±1.49	3.33±1.22*	1.5±1.17	5.83±1.04*

Summarized antifungal statistical analysis of benzene-1, 3-diol congeners provided in the MS

Comp	A. niger	T. rubrum	C. albicans	C. glabrata	C. neoformans
4a	2±1.01	-1.5±0.82	-7.33±1.02	-6±0.78	-7.17±0.99
4b	0.17±1.01	-1.5±0.82	3.17±1.02*	-4.17±0.78	3.67±0.99*
4c	2.67±1.01*	-1.5±0.82	-7.5±1.02	-6.17±0.78	-0.67±0.99
4d	0.5±1.01	-1.83±0.82	-5.33±1.02	-6.17±0.78	-2.5±0.99
4e	4.67±1.01*	2.67±0.82*	-7.5±1.02	2.17±0.78*	1.17±0.99
4f	4±1.01*	1.5±0.82	-14.17±1.02	2.17±0.78*	2.67±0.99*