Construction and screening of 2-aryl benzimidazole library identifies a new antifouling and antifungal agent

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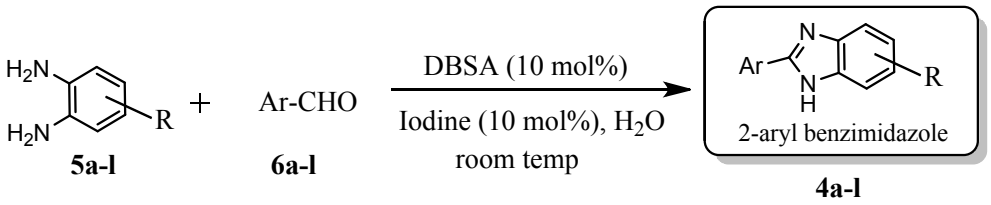
Supporting Information

Results of antifouling activity of synthesized 2-aryl benzimidazole library:



Entry	**4a-l**	R	Ar	Yield (%)
1	**a**	H	Ph	92
2	**b**	H	4-$NO_2C_6H_4$	94
3	**c**	4-CH_3	4-$NO_2C_6H_4$	93
4	**d**	4-Cl	4-$NO_2C_6H_4$	90
5	**e**	4-NO_2	4-$OCH_3C_6H_4$	92
6	**f**	H	4-BrC_6H_4	87
7	**g**	H	Furan-2-yl	80
8	**h**	4-CH_3	Furan-2-yl	81
9	**i**	4-NO_2	Furan-2-yl	83
10	**j**	4-NO_2	Pyrrole-2-yl	88
11	**k**	4-NO_2	Thiophene-2-yl	86
12	**l**	H	C_6H_5CH=CH-	86

Table 1: Antifouling activity[a,b,c] using Kirby-Bauer disc diffusion method.

Compounds	**Inhibition diameter in mm**												
	4a	**4b**	**4c**	**4d**	**4e**	**4f**	**4g**	**4h**	**4i**	**4j**	**4k**	**4l**	**std**
Alcanivorax spp.	-	-	-	-	-	2	-	4	-	**12**	-	**12**	**9**
Planococcus donghaensis	-	-	-	-	-	-	-	6	-	**14**	-	**11**	**4**
Aeromonas hydrophila subsp hydrophila ATCC 7966	-	-	-	-	-	-	-	-	-	**6**	-	**1**	**6**
Aeromonas hydrophila subsp. salmonicida A449	-	-	-	1	-	1	-	4	-	**12**	-	**14**	**16**
Erythrobacter litoralis	-	-	-	-	-	1	-	4	1	**10**	-	**11**	**15**
Alcanivorax borkumensis	-	-	-	-	-	1	-	4	-	**10**	-	**8**	**9**
Pseudomonas mendocina	-	-	-	-	-	1	-	4	1	**12**	-	**8**	**11**
Allivibrio salmonicida	-	-	-	-	-	3	-	-	-	**10**	-	**9**	**6**
Pseudoalteromonas spp.	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Vibrio furnisii	-	-	-	-	-	1	-	4	-	**11**	-	**8**	**12**

[a]The data are expressed as the measure of inhibition zone (mm) at concentration 100 µg/disc. [b](-) = no antifouling activity was observed. [c]data given are the mean of three replicates and the standard used in present study is Gentamycin antibiotic.

Table 2: Results of Anti-fungal assay (Clinical fungi)[a]

Compounds (100µg/disc)	*Aspergillus fumigatus*	*Rhodotorulla sp.*	*Candida albicans*	*Aspergillus niger*	*Cryptococcus neoformans*
4g	1	4	-	**12**	-
4h	1	3	-	6	**8**
4i	-	-	**6**	4	-
4j	-	-	**6**	-	-
4l	**9**	2	2	6	2
Standard Antibiotic (50µg/disc)	**12**	**9**	**10**	**13**	**9**

[a]The data are expressed as the measure of inhibition zone (mm) at concentration; data given are the mean of three replicates and the standard used in present study is penicillin antibiotic.