

Results

1. Antimicrobial activity

Table 1: Inhibition zone diameter (mm) (represented as mean±SE) of the newly tested compounds, Levofloxacin, Amoxicillin and Fluconazole at conc. of 500 µg/mL.

Compound number	Average Inhibition Zone Diameter (mm)					
	Gram Negative bacteria				Gram positive bacteria	Fungi
	<i>Escherichia coli</i>	<i>Pseudomonas aeruginosa</i>	<i>Klebsiella pneumoniae</i>	<i>Acinetobacter baumannii</i>	MSSA	<i>Candida albicans</i>
NA	20.83±0.60	18±0.57	20.3±1.2	-	-	13.8±0.16
NC	16.3±0.33	19.6±0.33	17.8±0.16	-	-	-
NE	19±0.01	20.16±0.6	20.6±0.33	-	-	15±0.01
NG	19.3±0.33	18.3±0.88	15.5±0.28	13.8±0.16	-	14.6±0.33
NB	18.3±0.66	22.3±0.3	16.6±0.33	15.5±0.28	15.5±0.28	13.8±0.4
ND	14.6±0.33	14.6±0.66	14±0.01	13.8±0.16	14.6±0.66	14±0.57
NF	20.6±0.33	21.3±0.33	20.5±0.28	15.3±0.33	17±0.01	15±0.57
NH	18±0.57	20.6±0.88	15.16±0.16	17.16±0.44	15.6±0.33	14.6±0.6
Levofloxacin*	26.3±0.33	19.6±1.3	27.5±0.28	30.5±0.28	41.1±0.01	NA
Amoxicillin*	17.6±0.33	15.3±0.33	16.3±0.33	15.6±0.33	25±0.01	NA
Fluconazole	NA	NA	NA	NA	NA	19±0.57
DMSO	----	----	----	----	----	----

**The most active compound; (-----): no activity.

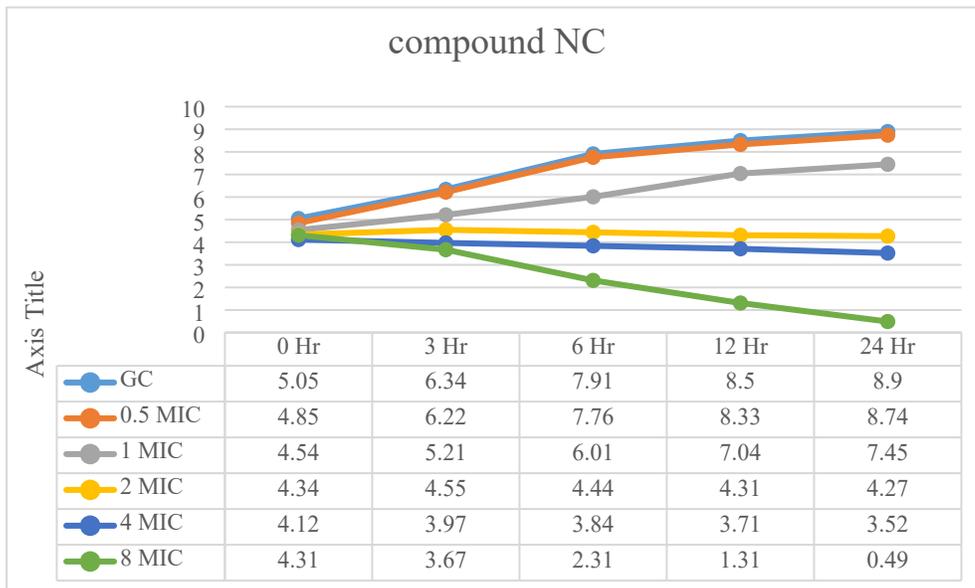
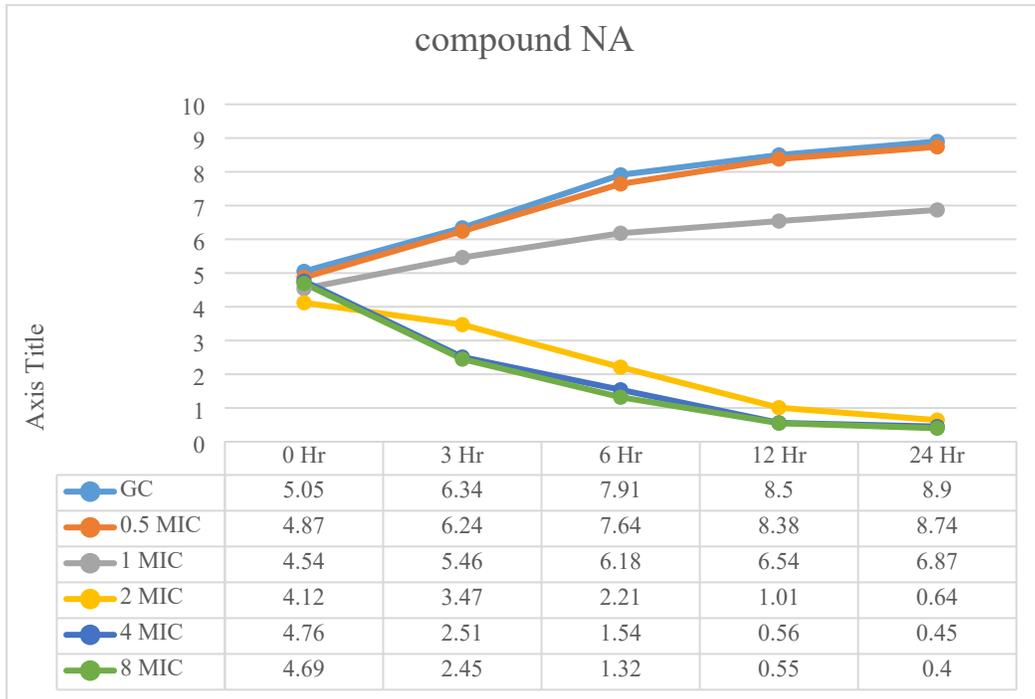
Table 2: Minimum inhibitory concentrations (MIC) (µg/mL) of the tested compounds as antibacterial and antifungal with ratio of (MBC or MFC) to MIC (R).

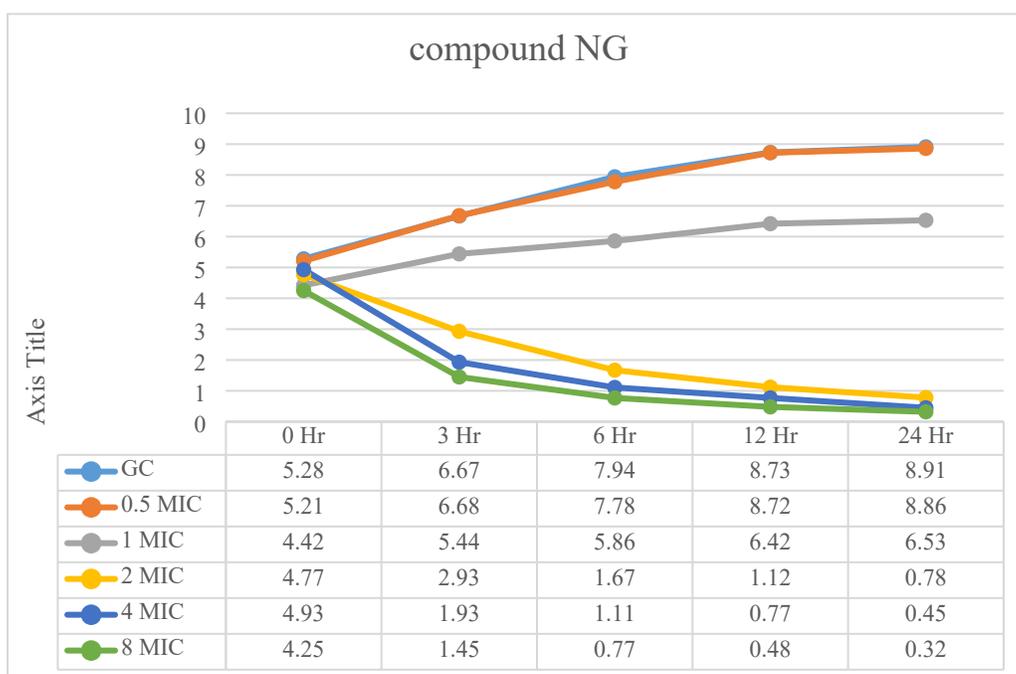
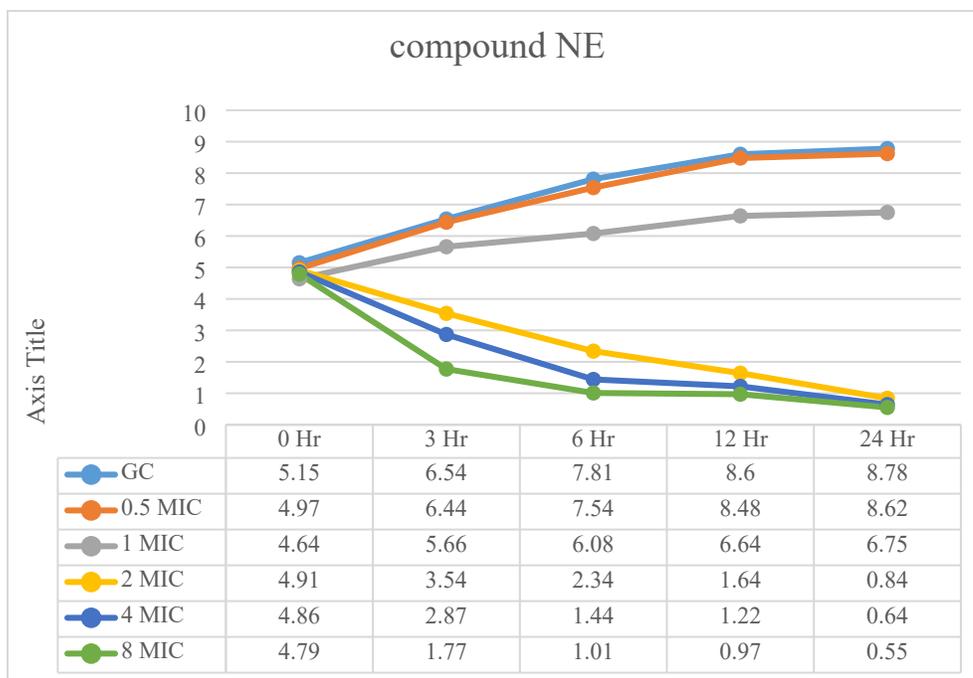
Cpd. No.	Gram Negative bacteria												Gram positive bacteria			Fungi		
	<i>Escherichia coli</i>			<i>Pseudomonas aeruginosa</i>			<i>Klebsiella pneumoniae</i>			<i>Acinetobacter baumannii</i>			MSSA			<i>Candida albicans</i>		
	MI	MB	R	MI	MB	R	MI	MB	R	MI	MB	R	MI	MB	R	MI	MF	R
NA	25	50	2	12.5	25	2	12.5	50	4	>200	>200	-	>200	>200	-	50	100	2

NC	12. 5	50	4	12. 5	10 0	8	50	20 0	4	>2 00	>2 00	-	>2 00	>2 00	-	12. 5	50	4
NE	12. 5	50	4	25	50	2	12. 5	50	4	>2 00	>2 00	-	>2 00	>2 00	-	50	10 0	2
NG	25	50	2	50	10 0	2	50	10 0	2	50	50	1	>2 00	>2 00	-	50	10 0	2
NB	12. 5	50	4	6.2 5	25	4	25	50	2	6.2 5	12. 5	2	12. 5	25	2	10 0	20 0	2
ND	6.2 5	12. 5	2	10 0	20 0	2	25	10 0	4	50	10 0	2	6.2 5	12. 5	2	12. 5	50	4
NF	12. 5	50	4	6.2 5	50	8	50	20 0	4	25	50	2	25	50	2	50	10 0	2
NH	50	20 0	4	12. 5	50	4	25	10 0	4	10 0	10 0	1	6.2 5	25	4	10 0	20 0	2
Levofloxacin	8			4			8			2			< 0.5			NA		
Amoxicillin	1			256			>1024			>1024			<0.5			NA		
Fluconazole	-			-			-			-			-			64		

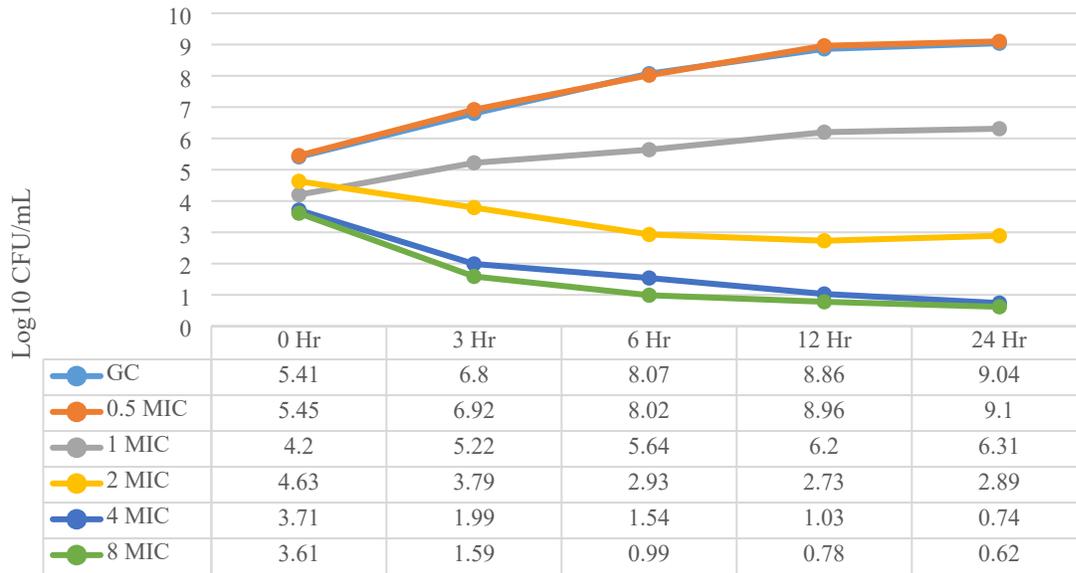
NA: non-applicable due to high MBC >1024; **The most active compound.

2-Time kill kinetics assay:

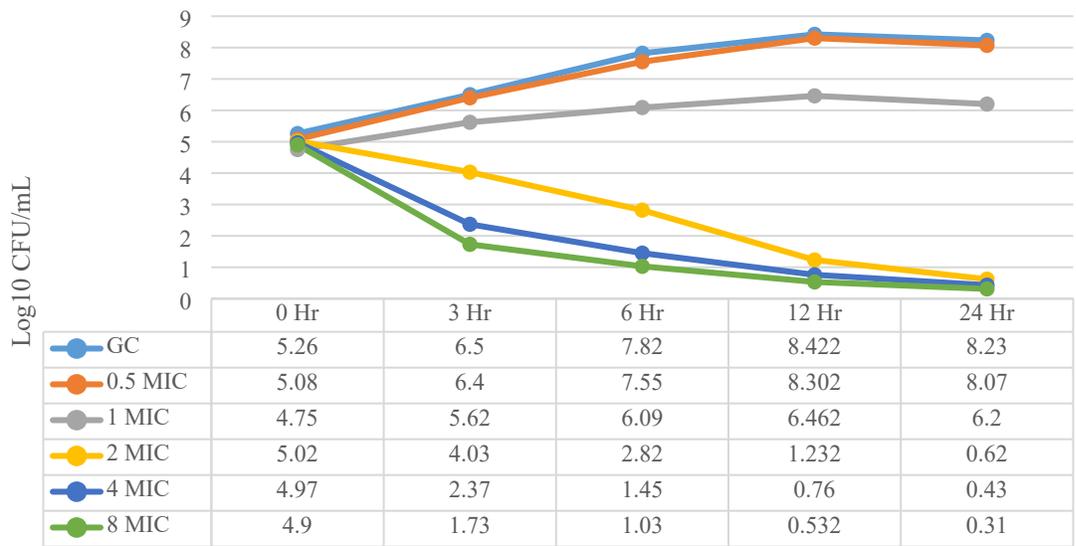




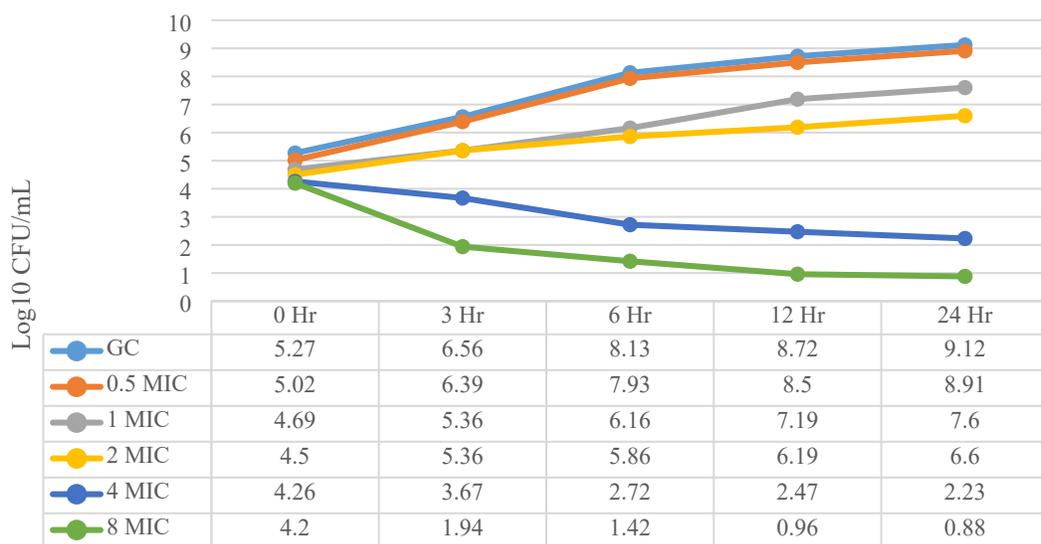
compound NB



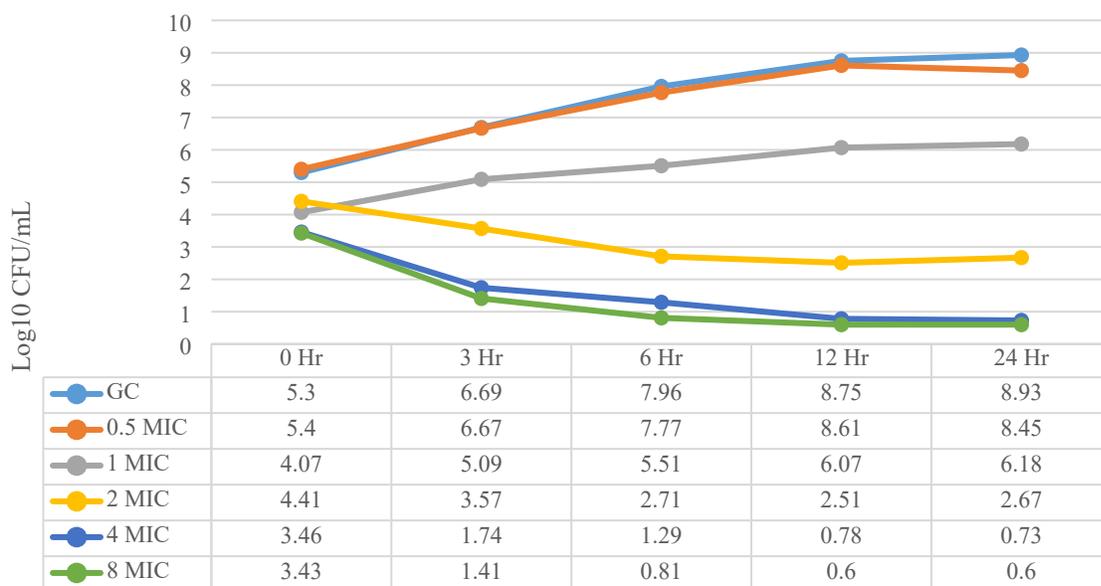
compound ND



compound NF



compound NH



3-Antibiofilm activity:



4. DNA supercoiling assay and determination of inhibitory activities of drugs:

Table 3: The inhibitory effect on of tested compounds on *Pseudomonas aeruginosa* DNA gyrase

Compound	DNA gyrase supercoiling p.aeruginosa	SD ±	DNA gyrase inhibition ratio (IC50cipro./ IC50 new comp.)
Code	IC50 ug/ml		
NA	67.07	2.698	0.707
NC	30.24	1.217	1.568
NE	54.88	2.208	0.864

NG	82.02	3.3	0.578
NB	35.65	1.434	1.3323
ND	74.66	3.004	0.635
NF	58.81	2.366	0.806
NH	27.97	1.125	1.69
Ciprofloxacin	47.43	1.908	

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NB		200	2.3	90	30	0	30	9.85	0	9.85	3.33333	11.82001
		100	2	75	30	0	30	24.77	0	24.77	3.33333	29.72403
		50	1.7	44	30	0	30	55.92	0	55.92	3.33333	67.10407
		10	1	18	30	0	30	81.62	0	81.62	3.33333	97.9441
		2.5	0.4	5.9	30	0	30	94.13	0	94.13	3.33333	112.9561
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NE		200	2.3	86	30	0	30	13.96	0	13.96	3.33333	16.75202
		100	2	63	30	0	30	37.41	0	37.41	3.33333	44.89204
		50	1.7	34	30	0	30	65.79	0	65.79	3.33333	78.94808
		10	1	7.9	30	0	30	92.05	0	92.05	3.33333	110.4601
		2.5	0.4	2.8	30	0	30	97.16	0	97.16	3.33333	116.5921
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NH		200	2.3	90	30	0	30	9.91	0	9.91	3.33333	11.89201
		100	2	77	30	0	30	22.76	0	22.76	3.33333	27.31203
		50	1.7	54	30	0	30	45.87	0	45.87	3.33333	55.04406
		10	1	27	30	0	30	72.99	0	72.99	3.33333	87.58809
		2.5	0.4	8.7	30	0	30	91.34	0	91.34	3.33333	109.6081
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NG		200	2.3	81	30	0	30	19.26	0	19.26	3.33333	23.11202
		100	2	61	30	0	30	38.52	0	38.52	3.33333	46.22405
		50	1.7	12	30	0	30	88.02	0	88.02	3.33333	105.6241

		10	1	7.4	30	0	30	92.61	0	92.61	3.33333	111.1321
		2.5	0.4	1.9	30	0	30	98.12	0	98.12	3.33333	117.7441
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NC		200	2.3	89	30	0	30	11.02	0	11.02	3.33333	13.22401
		100	2	75	30	0	30	25.11	0	25.11	3.33333	30.13203
		50	1.7	56	30	0	30	44.25	0	44.25	3.33333	53.10005
		10	1	22	30	0	30	78.19	0	78.19	3.33333	93.82809
		2.5	0.4	8.3	30	0	30	91.65	0	91.65	3.33333	109.9801
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
ND		200	2.3	82	30	0	30	17.51	0	17.51	3.33333	21.01202
		100	2	70	30	0	30	39.61	0	39.61	4.33333	36.56311
		50	1.7	9	30	0	30	91.03	0	91.03	3.33333	109.2361
		10	1	3	30	0	30	96.96	0	96.96	3.33333	116.3521
		2.5	0.4	1	30	0	30	99.02	0	99.02	3.33333	118.8241
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NA		200	2.3	85	30	0	30	15.12	0	15.12	3.33333	18.14402
		100	2	67	30	0	30	33.46	0	33.46	3.33333	40.15204
		50	1.7	15	30	0	30	84.79	0	84.79	3.33333	101.7481
		10	1	7.3	30	0	30	92.66	0	92.66	3.33333	111.1921
		2.5	0.4	2.5	30	0	30	97.51	0	97.51	3.33333	117.0121
EC				0	30	0	30	100	0	100	3.33333	120

code	IC50	conc	log	%inh	T2	T1	ΔT	RFU2	RFU1	ΔRFU	slope	K.Activity
NF		200	2.3	86	30	0	30	14.04	0	14.04	3.33333	16.84802
		100	2	69	30	0	30	31.21	0	31.21	3.33333	37.45204
		50	1.7	22	30	0	30	77.92	0	77.92	3.33333	93.50409
		10	1	7.3	30	0	30	92.65	0	92.65	3.33333	111.1801
		2.5	0.4	1.7	30	0	30	98.27	0	98.27	3.33333	117.9241

