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附錄一 光照前後毒性試驗原始數據

實驗毒物：Benzanthrone

初始細胞密度：15000

MCV：40.21

D(μ m)：4.25

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.59	6.87	212500	6.28	1.33	1.00	0.00	0.00	0.00
0.439	0.63	1.81	37600	1.18	0.46	0.35	0.65	0.89	0.81
0.22	0.66	2.44	59900	1.78	0.69	0.52	0.48	0.77	0.72
0.11	0.70	2.62	78700	1.92	0.83	0.63	0.37	0.68	0.69
0.055	0.58	3.57	98900	2.99	0.94	0.71	0.29	0.58	0.52
0.0275	0.65	5.13	145700	4.48	1.14	0.86	0.14	0.34	0.29
0.0138	0.62	6.76	177300	6.14	1.23	0.93	0.07	0.18	0.02
0.0069	0.69	6.92	201500	6.23	1.30	0.98	0.02	0.06	0.01
Control	0.67	7.05	228700	6.38	1.36	1.00	0.00	0.00	0.00
0.439	0.66	1.98	42000	1.32	0.51	0.38	0.62	0.87	0.79
0.22	0.71	2.87	64500	2.16	0.73	0.54	0.46	0.77	0.66
0.11	0.63	2.63	84500	2.00	0.86	0.63	0.37	0.67	0.69
0.055	0.59	3.43	99700	2.84	0.95	0.70	0.30	0.60	0.55
0.0275	0.64	4.91	135100	4.27	1.10	0.81	0.19	0.44	0.33
0.0138	0.58	6.88	183100	6.30	1.25	0.92	0.08	0.21	0.01
0.0069	0.65	7.03	213400	6.38	1.33	0.97	0.03	0.07	0.00
Control	0.67	6.96	230700	6.29	1.37	1.00	0.00	0.00	0.00
0.439	0.72	1.75	35400	1.03	0.43	0.31	0.69	0.91	0.84
0.22	0.66	2.43	56600	1.77	0.66	0.49	0.51	0.81	0.72
0.11	0.63	2.57	91200	1.94	0.90	0.66	0.34	0.65	0.69
0.055	0.64	3.19	103300	2.55	0.96	0.71	0.29	0.59	0.59
0.0275	0.63	5.12	144600	4.49	1.13	0.83	0.17	0.40	0.29
0.0138	0.59	6.62	182300	6.03	1.25	0.91	0.09	0.22	0.04
0.0069	0.66	6.71	200200	6.05	1.30	0.95	0.05	0.14	0.04
Control	0.64	6.96	223967	6.32	1.35	1.00	0.00	0.00	0.00
0.439	0.67	1.85	38333	1.18	0.47	0.35	0.65	0.89	0.81
0.22	0.68	2.58	60333	1.90	0.70	0.51	0.49	0.78	0.70
0.11	0.65	2.61	84800	1.95	0.87	0.64	0.36	0.67	0.69
0.055	0.60	3.40	100633	2.79	0.95	0.70	0.30	0.59	0.56
0.0275	0.64	5.05	141800	4.41	1.12	0.83	0.17	0.39	0.30
0.0138	0.60	6.75	180900	6.16	1.24	0.92	0.08	0.21	0.03
0.0069	0.67	6.89	205033	6.22	1.31	0.97	0.03	0.09	0.02

實驗毒物：UVB-Benzanthrone

初始細胞密度：15000

MCV：39.87

D(μ m)：4.239

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	1.31	9.41	336500	8.10	1.56	1.00	0.00	0.00	0.00
0.0584	1.28	1.97	36500	0.69	0.44	0.29	0.71	0.93	0.91
0.0292	1.24	2.84	54300	1.60	0.64	0.41	0.59	0.88	0.80
0.0146	1.31	4.44	94200	3.13	0.92	0.59	0.41	0.75	0.61
0.0073	1.34	5.01	156700	3.67	1.17	0.75	0.25	0.56	0.55
0.00365	1.35	6.64	174900	5.29	1.23	0.79	0.21	0.50	0.35
0.001825	1.22	7.43	219800	6.21	1.34	0.86	0.14	0.36	0.23
0.0009125	1.16	7.78	240100	6.62	1.39	0.89	0.11	0.30	0.18
Control	1.33	9.36	322800	8.03	1.53	1.00	0.00	0.00	0.00
0.0584	1.24	1.82	31400	0.58	0.37	0.24	0.76	0.95	0.93
0.0292	1.27	2.64	49400	1.37	0.60	0.39	0.61	0.89	0.83
0.0146	1.21	4.31	84600	3.10	0.86	0.56	0.44	0.77	0.61
0.0073	1.22	5.62	142800	4.40	1.13	0.73	0.27	0.58	0.45
0.00365	1.26	6.56	191700	5.30	1.27	0.83	0.17	0.43	0.34
0.001825	1.32	7.56	233600	6.24	1.37	0.89	0.11	0.29	0.22
0.0009125	1.43	7.98	244700	6.55	1.40	0.91	0.09	0.25	0.18
Control	1.35	9.42	299200	8.07	1.50	1.00	0.00	0.00	0.00
0.0584	1.27	1.94	33600	0.67	0.40	0.27	0.73	0.93	0.92
0.0292	1.21	2.75	58300	1.54	0.68	0.45	0.55	0.85	0.81
0.0146	1.28	4.46	98200	3.18	0.94	0.63	0.37	0.71	0.61
0.0073	1.24	5.45	156800	4.21	1.17	0.78	0.22	0.50	0.48
0.00365	1.25	6.68	192300	5.43	1.28	0.85	0.15	0.38	0.33
0.001825	1.17	7.62	224900	6.45	1.35	0.90	0.10	0.26	0.20
0.0009125	1.25	8.05	251300	6.80	1.41	0.94	0.06	0.17	0.16
Control	1.33	9.40	319500	8.07	1.53	1.00	0.00	0.00	0.00
0.0584	1.26	1.91	33833	0.65	0.41	0.27	0.73	0.94	0.92
0.0292	1.24	2.74	54000	1.50	0.64	0.42	0.58	0.87	0.81
0.0146	1.27	4.40	92333	3.14	0.91	0.59	0.41	0.75	0.61
0.0073	1.27	5.36	152100	4.09	1.16	0.76	0.24	0.55	0.49
0.00365	1.29	6.63	186300	5.34	1.26	0.82	0.18	0.44	0.34
0.001825	1.24	7.54	226100	6.30	1.36	0.89	0.11	0.31	0.22
0.0009125	1.28	7.94	245367	6.66	1.40	0.91	0.09	0.24	0.17

IR : Inhibition rate

實驗毒物：Phenanthrene

初始細胞密度：15000

MCV：38.45

D(μ m)：4.19

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	6.07	10.21	185800	4.14	1.26	1.00	0.00	0.00	0.00
0.25	5.98	7.90	34500	1.92	0.42	0.33	0.67	0.89	0.54
0.18	6.03	8.44	73700	2.41	0.80	0.63	0.37	0.66	0.42
0.15	6.06	8.83	84300	2.77	0.86	0.69	0.31	0.59	0.33
0.13	6.07	9.20	120800	3.13	1.04	0.83	0.17	0.38	0.24
0.09	5.95	9.73	141900	3.78	1.12	0.89	0.11	0.26	0.09
0.06	6.05	10.02	158500	3.97	1.18	0.94	0.06	0.16	0.04
Control	5.95	10.16	191200	4.21	1.27	1.00	0.00	0.00	0.00
0.25	6.06	7.94	35400	1.88	0.43	0.34	0.66	0.88	0.55
0.18	5.94	8.35	64000	2.41	0.73	0.57	0.43	0.72	0.43
0.15	6.03	8.83	76300	2.80	0.81	0.64	0.36	0.65	0.33
0.13	5.98	9.12	96700	3.14	0.93	0.73	0.27	0.54	0.25
0.09	6.05	9.90	135100	3.85	1.10	0.86	0.14	0.32	0.09
0.06	5.98	9.85	162600	3.87	1.19	0.94	0.06	0.16	0.08
Control	5.94	10.14	203300	4.20	1.30	1.00	0.00	0.00	0.00
0.25	6.02	7.97	26300	1.95	0.28	0.22	0.78	0.94	0.54
0.18	6.04	8.50	59300	2.46	0.69	0.53	0.47	0.76	0.41
0.15	5.96	8.72	82200	2.76	0.85	0.65	0.35	0.64	0.34
0.13	6.00	9.06	94800	3.06	0.92	0.71	0.29	0.58	0.27
0.09	6.04	9.82	139100	3.78	1.11	0.85	0.15	0.34	0.10
0.06	6.00	9.92	181200	3.92	1.25	0.96	0.04	0.12	0.07
Control	5.99	10.17	193433	4.18	1.28	1.00	0.00	0.00	0.00
0.25	6.02	7.94	32067	1.92	0.38	0.29	0.70	0.90	0.54
0.18	6.00	8.43	65667	2.43	0.74	0.58	0.42	0.72	0.42
0.15	6.02	8.79	80933	2.78	0.84	0.66	0.34	0.63	0.34
0.13	6.02	9.13	104100	3.11	0.97	0.76	0.24	0.50	0.26
0.09	6.01	9.82	138700	3.80	1.11	0.87	0.13	0.31	0.09
0.06	6.01	9.93	167433	3.92	1.21	0.94	0.06	0.15	0.06

IR : Inhibition rate

實驗毒物：UVA-Phenanthrene

初始細胞密度：15000

MCV：40.25

D(μ m)：4.25

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	1.06	7.21	243300	6.15	1.39	1.00	0.00	0.00	0.00
0.25	0.98	2.87	32700	1.89	0.39	0.28	0.72	0.92	0.69
0.18	1.02	3.44	72600	2.42	0.79	0.57	0.43	0.75	0.61
0.15	1.06	3.93	91500	2.87	0.90	0.65	0.35	0.66	0.53
0.13	1.07	4.20	121100	3.13	1.04	0.75	0.25	0.54	0.49
0.09	0.88	4.73	151600	3.85	1.16	0.83	0.17	0.40	0.37
0.06	0.93	5.47	176600	4.54	1.23	0.89	0.11	0.29	0.26
Control	0.94	7.16	237400	6.22	1.38	1.00	0.00	0.00	0.00
0.25	1.05	2.94	31200	1.89	0.37	0.27	0.73	0.93	0.70
0.18	0.94	3.35	68600	2.41	0.76	0.55	0.45	0.76	0.61
0.15	1.02	3.83	87500	2.81	0.88	0.64	0.36	0.67	0.55
0.13	0.98	4.12	104400	3.14	0.97	0.70	0.30	0.60	0.50
0.09	1.05	4.90	147600	3.85	1.14	0.83	0.17	0.40	0.38
0.06	0.98	5.45	181200	4.47	1.25	0.90	0.10	0.25	0.28
Control	0.94	7.14	241200	6.20	1.39	1.00	0.00	0.00	0.00
0.25	1.02	2.97	28700	1.95	0.32	0.23	0.77	0.94	0.69
0.18	1.04	3.50	63300	2.46	0.72	0.52	0.48	0.79	0.60
0.15	0.98	3.92	99600	2.94	0.95	0.68	0.32	0.63	0.53
0.13	1.01	4.26	115300	3.25	1.02	0.73	0.27	0.56	0.48
0.09	0.99	4.82	155400	3.83	1.17	0.84	0.16	0.38	0.38
0.06	0.98	5.52	191300	4.54	1.27	0.92	0.08	0.22	0.27
Control	0.98	7.17	240633	6.19	1.39	1.00	0.00	0.00	0.00
0.25	1.02	2.93	30867	1.91	0.36	0.26	0.74	0.93	0.69
0.18	1.00	3.43	68167	2.43	0.76	0.54	0.45	0.76	0.61
0.15	1.02	3.89	92867	2.87	0.91	0.66	0.34	0.65	0.54
0.13	1.02	4.19	113600	3.17	1.01	0.73	0.27	0.56	0.49
0.09	0.97	4.82	151533	3.84	1.16	0.83	0.17	0.39	0.38
0.06	0.96	5.48	183033	4.52	1.25	0.90	0.10	0.26	0.27

IR : Inhibition rate

實驗毒物：Fluoranthene

初始細胞密度：15000

MCV：42.39

D(μ m)：4.326

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.53	6.52	185200	5.99	1.26	1.00	0.00	0.00	0.00
0.112	0.90	2.06	38500	1.16	0.47	0.38	0.62	0.86	0.81
0.096	0.57	2.98	41200	2.41	0.51	0.40	0.60	0.85	0.60
0.08	0.84	3.47	49100	2.63	0.59	0.47	0.53	0.80	0.56
0.064	0.80	3.84	56000	3.04	0.66	0.52	0.48	0.76	0.49
0.032	0.70	4.65	99700	3.95	0.95	0.75	0.25	0.50	0.34
0.016	0.78	5.46	147500	4.68	1.14	0.91	0.09	0.22	0.22
Control	0.76	7.16	182900	6.40	1.25	1.00	0.00	0.00	0.00
0.112	0.78	2.41	38900	1.63	0.48	0.38	0.62	0.86	0.75
0.096	0.60	2.76	43900	2.16	0.54	0.43	0.57	0.83	0.66
0.08	0.77	3.56	51200	2.79	0.61	0.49	0.51	0.78	0.56
0.064	0.55	3.77	61400	3.22	0.70	0.56	0.44	0.72	0.50
0.032	0.61	4.92	90200	4.31	0.90	0.72	0.28	0.55	0.33
0.016	0.60	5.72	155100	5.12	1.17	0.93	0.07	0.17	0.20
Control	0.61	6.46	193600	5.85	1.28	1.00	0.00	0.00	0.00
0.112	0.90	2.20	34600	1.30	0.42	0.33	0.67	0.89	0.78
0.096	0.53	2.93	43000	2.40	0.53	0.41	0.59	0.84	0.59
0.08	0.67	3.34	50200	2.67	0.60	0.47	0.53	0.80	0.54
0.064	0.53	3.96	67500	3.43	0.75	0.59	0.41	0.71	0.41
0.032	0.48	5.03	94000	4.55	0.92	0.72	0.28	0.56	0.22
0.016	0.81	5.45	161700	4.64	1.19	0.93	0.07	0.18	0.21
Control	0.63	6.71	187233	6.08	1.26	1.00	0.00	0.00	0.00
0.112	0.86	2.22	37333	1.36	0.46	0.36	0.64	0.87	0.78
0.096	0.57	2.89	42700	2.32	0.52	0.41	0.59	0.84	0.62
0.08	0.76	3.46	50167	2.70	0.60	0.48	0.52	0.80	0.56
0.064	0.63	3.86	61633	3.23	0.71	0.56	0.44	0.73	0.47
0.032	0.60	4.87	94633	4.27	0.92	0.73	0.27	0.54	0.30
0.016	0.73	5.54	154767	4.81	1.17	0.92	0.08	0.19	0.21

IR : Inhibition rate

實驗毒物：UVB-Fluoranthene

初始細胞密度：15000

MCV：41.44

D(μ m)：4.294

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	1.10	9.39	299800	8.29	1.50	1.00	0.00	0.00	0.00
0.096	1.28	2.78	38400	1.50	0.47	0.31	0.69	0.92	0.82
0.048	1.33	3.84	70900	2.51	0.78	0.52	0.48	0.80	0.70
0.024	1.32	4.03	97600	2.71	0.94	0.63	0.37	0.71	0.67
0.012	1.34	6.32	182300	4.98	1.25	0.83	0.17	0.41	0.40
0.006	1.36	7.07	244400	5.71	1.40	0.93	0.07	0.19	0.31
0.003	1.38	8.46	287000	7.08	1.48	0.99	0.01	0.04	0.15
Control	1.21	9.28	301200	8.07	1.50	1.00	0.00	0.00	0.00
0.096	1.24	2.82	44600	1.58	0.54	0.36	0.64	0.90	0.80
0.048	1.31	3.97	71200	2.66	0.78	0.52	0.48	0.80	0.67
0.024	1.28	4.02	102400	2.74	0.96	0.64	0.36	0.69	0.66
0.012	1.26	6.64	177600	5.38	1.24	0.82	0.18	0.43	0.33
0.006	1.25	7.25	234100	6.00	1.37	0.92	0.08	0.23	0.26
0.003	1.33	8.37	299400	7.04	1.50	1.00	0.00	0.01	0.13
Control	1.19	9.35	293400	8.16	1.49	1.00	0.00	0.00	0.00
0.096	1.23	2.91	39500	1.68	0.48	0.33	0.67	0.91	0.79
0.048	1.27	3.69	84400	2.42	0.86	0.58	0.42	0.75	0.70
0.024	1.32	4.11	113600	2.79	1.01	0.68	0.32	0.65	0.66
0.012	1.28	6.23	187900	4.95	1.26	0.85	0.15	0.38	0.39
0.006	1.25	7.28	247800	6.03	1.40	0.94	0.06	0.16	0.26
0.003	1.29	8.12	284500	6.83	1.47	0.99	0.01	0.03	0.16
Control	1.17	9.34	298133	8.17	1.49	1.00	0.00	0.00	0.00
0.096	1.25	2.84	40833	1.59	0.50	0.33	0.67	0.91	0.81
0.048	1.30	3.83	75500	2.53	0.81	0.54	0.46	0.79	0.69
0.024	1.31	4.05	104533	2.75	0.97	0.65	0.35	0.68	0.66
0.012	1.29	6.40	182600	5.10	1.25	0.84	0.16	0.41	0.38
0.006	1.29	7.20	242100	5.91	1.39	0.93	0.07	0.20	0.28
0.003	1.33	8.32	290300	6.98	1.48	0.99	0.01	0.03	0.15

IR : Inhibition rate

實驗毒物：Anthracene

初始細胞密度：15000

MCV：43.89

D(μ m)：4.377

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.69	7.70	258700	7.01	1.42	1.00	0.00	0.00	0.00
1.2	1.12	2.08	45200	0.96	0.55	0.39	0.61	0.88	0.86
1	1.21	2.91	57700	1.70	0.67	0.47	0.53	0.82	0.76
0.8	0.89	3.93	74500	3.04	0.80	0.56	0.44	0.76	0.57
0.6	0.89	4.87	104300	3.98	0.97	0.68	0.32	0.63	0.43
0.4	0.86	6.53	144300	5.67	1.13	0.79	0.21	0.47	0.19
0.2	0.97	6.93	197200	5.96	1.29	0.90	0.10	0.25	0.15
Control	0.81	7.71	245800	6.90	1.40	1.00	0.00	0.00	0.00
1.2	1.16	1.93	40200	0.77	0.49	0.35	0.65	0.89	0.89
1	1.02	2.35	59100	1.33	0.69	0.49	0.51	0.81	0.81
0.8	0.98	3.71	70100	2.73	0.77	0.55	0.45	0.76	0.60
0.6	0.92	4.83	94200	3.91	0.92	0.66	0.34	0.66	0.43
0.4	0.96	6.35	133500	5.39	1.09	0.78	0.22	0.49	0.22
0.2	0.98	6.78	188800	5.80	1.27	0.91	0.09	0.25	0.16
Control	0.72	7.56	255300	6.84	1.42	1.00	0.00	0.00	0.00
1.2	1.04	2.11	43700	1.07	0.53	0.38	0.62	0.88	0.84
1	1.06	2.62	54500	1.56	0.65	0.46	0.54	0.84	0.77
0.8	0.88	3.76	73300	2.88	0.79	0.56	0.44	0.76	0.58
0.6	0.89	4.78	98700	3.89	0.94	0.66	0.34	0.65	0.43
0.4	0.86	6.44	144600	5.58	1.13	0.80	0.20	0.46	0.18
0.2	0.91	6.72	185800	5.81	1.26	0.89	0.11	0.29	0.15
Control	0.74	7.66	253267	6.92	1.41	1.00	0.00	0.00	0.00
1.2	1.11	2.04	43033	0.93	0.53	0.37	0.63	0.88	0.87
1	1.10	2.63	57100	1.53	0.67	0.47	0.53	0.82	0.78
0.8	0.92	3.80	72633	2.88	0.79	0.56	0.44	0.76	0.58
0.6	0.90	4.83	99067	3.93	0.94	0.67	0.33	0.65	0.43
0.4	0.89	6.44	140800	5.55	1.12	0.79	0.21	0.47	0.20
0.2	0.95	6.81	190600	5.86	1.27	0.90	0.10	0.26	0.15

IR : Inhibition rate

實驗毒物：UVB-Anthracene

初始細胞密度：15000

MCV：42.16

D(μ m)：4.318

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	0.53	7.43	231400	6.90	1.37	1.00	0.00	0.00	0.00
0.32	0.82	2.32	23300	1.50	0.22	0.16	0.84	0.96	0.78
0.2	0.87	2.56	31200	1.69	0.37	0.27	0.73	0.93	0.76
0.16	0.84	3.12	50300	2.28	0.60	0.44	0.56	0.84	0.67
0.12	0.81	5.64	154600	4.83	1.17	0.85	0.15	0.35	0.30
0.08	0.83	6.62	185600	5.79	1.26	0.92	0.08	0.21	0.16
0.04	0.84	6.92	209200	6.08	1.32	0.96	0.04	0.10	0.12
Control	0.76	7.46	243200	6.70	1.39	1.00	0.00	0.00	0.00
0.32	0.79	2.33	24300	1.54	0.24	0.17	0.83	0.96	0.77
0.2	0.61	2.67	30300	2.06	0.35	0.25	0.75	0.93	0.69
0.16	0.77	3.43	49500	2.66	0.60	0.43	0.57	0.85	0.60
0.12	0.79	4.96	146200	4.17	1.14	0.82	0.18	0.43	0.38
0.08	0.82	6.56	193700	5.74	1.28	0.92	0.08	0.22	0.14
0.04	0.77	7.02	228900	6.25	1.36	0.98	0.02	0.06	0.07
Control	0.63	7.73	243200	7.10	1.39	1.00	0.00	0.00	0.00
0.32	0.92	2.27	199	1.35	-2.16	-1.55	2.55	1.06	0.81
0.2	0.87	2.85	31600	1.98	0.37	0.27	0.73	0.93	0.72
0.16	0.84	3.54	47600	2.70	0.58	0.41	0.59	0.86	0.62
0.12	0.87	5.23	142300	4.36	1.12	0.81	0.19	0.44	0.39
0.08	0.83	6.68	193500	5.85	1.28	0.92	0.08	0.22	0.18
0.04	0.86	6.96	221700	6.10	1.35	0.97	0.03	0.09	0.14
Control	0.64	7.54	239267	6.90	1.38	1.00	0.00	0.00	0.00
0.32	0.84	2.31	15933	1.46	-0.57	-0.41	0.98	1.00	0.79
0.2	0.78	2.69	31033	1.91	0.36	0.26	0.74	0.93	0.72
0.16	0.82	3.36	49133	2.55	0.59	0.43	0.57	0.85	0.63
0.12	0.82	5.28	147700	4.45	1.14	0.83	0.17	0.41	0.35
0.08	0.83	6.62	190933	5.79	1.27	0.92	0.08	0.22	0.16
0.04	0.82	6.97	219933	6.14	1.34	0.97	0.03	0.09	0.11

IR : Inhibition rate

實驗毒物：Benzo[a]anthracene

初始細胞密度：15000

MCV：38.11

D(μ m)：4.18

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.90	10.52	267800	9.62	1.44	1.00	0.00	0.00	0.00
0.696	0.95	2.72	35500	1.77	0.43	0.30	0.70	0.92	0.82
0.174	0.67	3.63	42300	2.96	0.52	0.36	0.64	0.89	0.69
0.0435	1.06	4.57	57400	3.51	0.67	0.47	0.53	0.83	0.64
0.0218	0.92	5.03	65100	4.11	0.73	0.51	0.49	0.80	0.57
0.011	0.87	6.62	112900	5.75	1.01	0.70	0.30	0.61	0.40
0.006	0.87	7.63	179300	6.76	1.24	0.86	0.14	0.35	0.30
Control	0.56	9.78	245200	9.22	1.40	1.00	0.00	0.00	0.00
0.696	0.69	2.74	33300	2.05	0.40	0.29	0.71	0.92	0.78
0.174	0.85	3.84	40300	2.99	0.49	0.35	0.65	0.89	0.68
0.0435	0.78	4.49	49400	3.71	0.60	0.43	0.57	0.85	0.60
0.0218	0.73	4.89	58100	4.16	0.68	0.48	0.52	0.81	0.55
0.011	1.16	6.87	131000	5.71	1.08	0.78	0.22	0.50	0.38
0.006	0.80	7.49	153700	6.69	1.16	0.83	0.17	0.40	0.27
Control	0.73	10.15	256500	9.42	1.42	1.00	0.00	0.00	0.00
0.696	0.82	2.73	34400	1.91	0.41	0.29	0.71	0.92	0.80
0.174	0.76	3.74	41300	2.98	0.51	0.36	0.64	0.89	0.68
0.0435	0.92	4.53	53400	3.61	0.63	0.45	0.55	0.84	0.62
0.0218	0.83	4.96	61600	4.14	0.71	0.50	0.50	0.81	0.56
0.011	1.02	6.75	121950	5.73	1.05	0.74	0.26	0.56	0.39
0.006	0.84	7.56	166500	6.73	1.20	0.85	0.15	0.37	0.29

IR : Inhibition rate

實驗毒物：UVB-Benzo[a]anthracene

初始細胞密度：15000

MCV：42.48

D(μ m)：4.329

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR IR IR	IR IR IR	IR IR IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	1.18	7.21	287200	6.03	1.48	1.00	0.00	0.00	0.00
0.01100	1.23	2.97	24200	1.74	0.24	0.16	0.84	0.97	0.71
0.00550	1.22	3.83	39700	2.61	0.49	0.33	0.67	0.91	0.57
0.00275	1.15	4.43	45400	3.28	0.55	0.38	0.62	0.89	0.46
0.00138	1.14	5.06	94200	3.92	0.92	0.62	0.38	0.71	0.35
0.00069	1.15	5.41	147200	4.26	1.14	0.77	0.23	0.51	0.29
0.00034	1.13	6.21	222300	5.08	1.35	0.91	0.09	0.24	0.16
0.00017	1.12	6.72	243200	5.60	1.39	0.94	0.06	0.16	0.07
Control	1.16	7.12	291600	5.96	1.48	1.00	0.00	0.00	0.00
0.01100	1.16	3.18	31400	2.02	0.37	0.25	0.75	0.94	0.66
0.00550	1.17	3.78	40400	2.61	0.50	0.33	0.67	0.91	0.56
0.00275	1.21	4.24	47700	3.03	0.58	0.39	0.61	0.88	0.49
0.00138	1.21	4.97	97000	3.76	0.93	0.63	0.37	0.70	0.37
0.00069	1.22	5.44	157000	4.22	1.17	0.79	0.21	0.49	0.29
0.00034	1.16	6.17	233600	5.01	1.37	0.93	0.07	0.21	0.16
0.00017	1.12	6.89	244700	5.77	1.40	0.94	0.06	0.17	0.03
Control	1.13	7.24	299700	6.11	1.50	1.00	0.00	0.00	0.00
0.01100	1.17	2.88	28800	1.71	0.33	0.22	0.78	0.95	0.72
0.00550	1.21	3.76	39300	2.55	0.48	0.32	0.68	0.91	0.58
0.00275	1.13	4.42	47600	3.29	0.58	0.39	0.61	0.89	0.46
0.00138	1.14	4.92	88500	3.78	0.89	0.59	0.41	0.74	0.38
0.00069	1.11	5.45	156300	4.34	1.17	0.78	0.22	0.50	0.29
0.00034	1.07	6.24	221800	5.17	1.35	0.90	0.10	0.27	0.15
0.00017	1.21	6.68	251200	5.47	1.41	0.94	0.06	0.17	0.10
Control	1.16	7.19	292833	6.03	1.49	1.00	0.00	0.00	0.00
0.01100	1.19	3.01	28133	1.82	0.31	0.21	0.79	0.95	0.70
0.00550	1.20	3.79	39800	2.59	0.49	0.33	0.67	0.91	0.57
0.00275	1.16	4.36	46900	3.20	0.57	0.38	0.62	0.89	0.47
0.00138	1.16	4.98	93233	3.82	0.91	0.61	0.39	0.72	0.37
0.00069	1.16	5.43	153500	4.27	1.16	0.78	0.22	0.50	0.29
0.00034	1.12	6.21	225900	5.09	1.36	0.91	0.09	0.24	0.16
0.00017	1.15	6.76	246367	5.61	1.40	0.94	0.06	0.17	0.07

IR : Inhibition rate

實驗毒物：Acridine

初始細胞密度：15000

MCV：37.25

D(μ m)：4.144

initial PH：7.5

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Ratee)			
Control	1.11	7.87	233100	6.76	1.37	1.00	0.00	0.00	0.00
1.25	1.07	2.38	34300	1.31	0.41	0.30	0.70	0.91	0.81
1	1.02	3.34	41500	2.32	0.51	0.37	0.63	0.88	0.66
0.76	0.97	3.46	75600	2.49	0.81	0.59	0.41	0.72	0.63
0.62	0.98	4.85	95100	3.87	0.92	0.67	0.33	0.63	0.43
0.5	0.85	5.54	117300	4.69	1.03	0.75	0.25	0.53	0.31
0.38	0.92	6.75	177300	5.83	1.23	0.90	0.10	0.26	0.14
Control	1.15	7.67	241800	6.52	1.39	1.00	0.00	0.00	0.00
1.25	1.06	2.36	36400	1.30	0.44	0.32	0.68	0.91	0.80
1	0.98	3.26	39700	2.28	0.49	0.35	0.65	0.89	0.65
0.76	0.95	3.67	69400	2.72	0.77	0.55	0.45	0.76	0.58
0.62	0.92	4.62	99000	3.70	0.94	0.68	0.32	0.63	0.43
0.5	0.97	5.65	135100	4.68	1.10	0.79	0.21	0.47	0.28
0.38	1.01	6.21	165900	5.20	1.20	0.86	0.14	0.33	0.20
Control	1.09	7.49	227400	6.40	1.36	1.00	0.00	0.00	0.00
1.25	1.36	2.50	32400	1.14	0.39	0.28	0.72	0.92	0.82
1	0.74	3.33	43600	2.59	0.53	0.39	0.61	0.87	0.60
0.76	0.84	3.84	74300	3.00	0.80	0.59	0.41	0.72	0.53
0.62	0.94	4.77	103400	3.83	0.97	0.71	0.29	0.58	0.40
0.5	0.88	5.46	135700	4.58	1.10	0.81	0.19	0.43	0.28
0.38	1.03	6.35	176000	5.32	1.23	0.91	0.09	0.24	0.17
Control	1.12	7.68	234100	6.56	1.37	1.00	0.00	0.00	0.00
1.25	1.16	2.41	34367	1.25	0.41	0.30	0.70	0.91	0.81
1	0.91	3.31	41600	2.40	0.51	0.37	0.63	0.88	0.63
0.76	0.92	3.66	73100	2.74	0.79	0.58	0.42	0.73	0.58
0.62	0.95	4.75	99167	3.80	0.94	0.69	0.31	0.62	0.42
0.5	0.90	5.55	129367	4.65	1.08	0.78	0.22	0.48	0.29
0.38	0.99	6.44	173067	5.45	1.22	0.89	0.11	0.28	0.17

IR : Inhibition rate

實驗毒物：UVB-Acridine

初始細胞密度：15000

MCV：40.30

D(μ m)：4.25

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	1.23	7.54	267800	6.31	1.44	1	0	0	0
0.8	1.09	2.27	26700	1.18	0.28	0.20	0.79	0.95	0.81
0.4	1.16	2.58	33300	1.42	0.39	0.27	0.72	0.92	0.77
0.2	1.26	3.21	60400	1.95	0.69	0.48	0.51	0.82	0.69
0.1	1.15	3.11	110700	1.96	0.99	0.69	0.30	0.62	0.68
0.05	1.21	3.42	147200	2.21	1.14	0.79	0.20	0.47	0.64
0.025	1.23	4.15	162100	2.92	1.19	0.82	0.17	0.41	0.53
0.0125	1.18	5.78	189200	4.6	1.26	0.87	0.12	0.31	0.27
Control	1.02	7.62	275100	6.6	1.45	1	0	0	0
0.8	1.13	2.43	20500	1.3	0.15	0.10	0.89	0.97	0.80
0.4	1.24	2.62	34300	1.38	0.41	0.28	0.71	0.92	0.79
0.2	1.21	3.11	50300	1.9	0.60	0.41	0.58	0.86	0.71
0.1	1.23	3.44	107000	2.21	0.98	0.67	0.32	0.64	0.66
0.05	1.44	3.77	157000	2.33	1.17	0.80	0.19	0.45	0.64
0.025	1.42	4.25	167700	2.83	1.20	0.82	0.17	0.41	0.57
0.0125	1.41	5.76	175300	4.35	1.22	0.84	0.15	0.38	0.34
Control	1.11	7.77	277000	6.66	1.45	1	0	0	0
0.8	1.12	2.44	24300	1.32	0.24	0.16	0.83	0.96	0.80
0.4	1.18	2.63	34600	1.45	0.41	0.28	0.71	0.92	0.78
0.2	1.21	3.24	57800	2.03	0.67	0.46	0.53	0.83	0.69
0.1	1.22	3.45	112300	2.23	1.0	0.69	0.30	0.62	0.66
0.05	1.32	3.78	146800	2.46	1.14	0.78	0.21	0.49	0.63
0.025	1.24	4.16	168200	2.92	1.20	0.82	0.17	0.41	0.56
0.0125	1.26	5.82	184400	4.56	1.25	0.86	0.13	0.35	0.31
Control	1.12	7.64	273300	6.52	1.45	1	0	0	0
0.8	1.11	2.38	23833	1.26	0.22	0.15	0.84	0.96	0.80
0.4	1.19	2.61	34066	1.41	0.41	0.28	0.71	0.92	0.78
0.2	1.22	3.18	56166	1.96	0.65	0.45	0.54	0.84	0.69
0.1	1.20	3.33	110000	2.13	0.99	0.68	0.31	0.63	0.67
0.05	1.32	3.65	150333	2.33	1.15	0.79	0.20	0.47	0.64
0.025	1.29	4.18	166000	2.89	1.20	0.82	0.17	0.41	0.55
0.0125	1.28	5.78	182966	4.50	1.25	0.86	0.13	0.34	0.30

IR : Inhibition rate

實驗毒物：Benzo[b]fluorene

初始細胞密度：15000

MCV：42.16

D(μ m)：4.318

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	1.38	7.94	277100	6.56	1.46	1.00	0.00	0.00	0.00
1.28	1.27	3.12	29700	1.85	0.34	0.23	0.77	0.94	0.72
0.64	1.34	4.20	61700	2.86	0.71	0.48	0.52	0.82	0.56
0.32	1.17	4.88	71700	3.71	0.78	0.54	0.46	0.78	0.43
0.16	1.24	4.35	80900	3.11	0.84	0.58	0.42	0.75	0.53
0.08	1.27	4.94	110900	3.67	1.00	0.69	0.31	0.63	0.44
0.04	1.29	5.48	156800	4.19	1.17	0.80	0.20	0.46	0.36
0.02	1.35	6.72	183500	5.37	1.25	0.86	0.14	0.36	0.18
Control	1.24	7.85	278600	6.61	1.46	1.00	0.00	0.00	0.00
1.28	1.24	3.18	33200	1.94	0.40	0.27	0.73	0.93	0.71
0.64	1.29	4.45	56200	3.16	0.66	0.45	0.55	0.84	0.52
0.32	1.21	4.81	68500	3.60	0.76	0.52	0.48	0.80	0.46
0.16	1.28	4.64	76400	3.36	0.81	0.56	0.44	0.77	0.49
0.08	1.44	4.88	127100	3.44	1.07	0.73	0.27	0.57	0.48
0.04	1.23	5.56	154400	4.33	1.17	0.80	0.20	0.47	0.34
0.02	1.38	6.79	175600	5.41	1.23	0.84	0.16	0.39	0.18
Control	1.21	7.73	292400	6.52	1.49	1.00	0.00	0.00	0.00
1.28	1.09	3.02	24300	1.93	0.24	0.16	0.84	0.97	0.70
0.64	1.22	4.44	55400	3.22	0.65	0.44	0.56	0.85	0.51
0.32	1.33	4.82	72400	3.49	0.79	0.53	0.47	0.79	0.46
0.16	1.26	4.72	83300	3.46	0.86	0.58	0.42	0.75	0.47
0.08	1.33	4.81	122400	3.48	1.05	0.71	0.29	0.61	0.47
0.04	1.22	5.55	157100	4.33	1.17	0.79	0.21	0.49	0.34
0.02	1.11	6.77	188200	5.66	1.26	0.85	0.15	0.38	0.13
Control	1.28	7.84	282700	6.56	1.47	1.00	0.00	0.00	0.00
1.28	1.20	3.11	29067	1.91	0.33	0.22	0.77	0.95	0.71
0.64	1.28	4.36	57767	3.08	0.67	0.46	0.54	0.84	0.53
0.32	1.24	4.84	70867	3.60	0.78	0.53	0.47	0.79	0.45
0.16	1.26	4.57	80200	3.31	0.84	0.57	0.43	0.76	0.50
0.08	1.35	4.88	120133	3.53	1.04	0.71	0.29	0.61	0.46
0.04	1.25	5.53	156100	4.28	1.17	0.80	0.20	0.47	0.35
0.02	1.28	6.76	182433	5.48	1.25	0.85	0.15	0.37	0.17

IR : Inhibition rate

實驗毒物：UVB-Benzo[b]fluorene

初始細胞密度：15000

MCV：39.46

D(μ m)：4.225

initial PH：7.4

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	1.12	7.82	267400	6.7	1.445	1	0	0	0
1.28	1.23	2.86	31200	1.63	0.36	0.25	0.74	0.93	0.75
0.64	1.11	3.98	59600	2.87	0.68	0.47	0.52	0.82	0.57
0.32	1.14	4.46	77400	3.32	0.82	0.56	0.43	0.75	0.50
0.16	1.22	4.32	91800	3.1	0.90	0.62	0.37	0.69	0.53
0.08	1.25	4.96	120100	3.71	1.04	0.72	0.27	0.58	0.447
0.04	1.16	5.77	154300	4.61	1.16	0.80	0.19	0.44	0.31
0.02	1.17	6.64	181800	5.47	1.24	0.86	0.13	0.33	0.18
Control	1.24	7.96	277800	6.72	1.45	1	0	0	0
1.28	1.19	3.03	33300	1.84	0.39	0.27	0.72	0.93	0.72
0.64	1.23	3.84	56400	2.61	0.66	0.45	0.54	0.84	0.61
0.32	1.22	4.81	68100	3.59	0.75	0.51	0.48	0.79	0.46
0.16	1.17	4.54	88900	3.37	0.88	0.60	0.39	0.71	0.49
0.08	1.23	4.88	127400	3.65	1.06	0.73	0.26	0.57	0.45
0.04	1.15	5.81	161200	4.66	1.18	0.81	0.18	0.44	0.30
0.02	1.18	6.72	177300	5.54	1.23	0.84	0.15	0.38	0.17
Control	1.19	7.81	268500	6.62	1.44	1	0	0	0
1.28	1.21	2.78	29900	1.57	0.34	0.23	0.76	0.94	0.76
0.64	1.32	3.98	53500	2.66	0.63	0.440	0.55	0.84	0.59
0.32	1.27	4.82	73700	3.55	0.79	0.55	0.44	0.76	0.46
0.16	1.16	4.66	93400	3.5	0.91	0.63	0.36	0.69	0.47
0.08	1.28	4.81	130100	3.53	1.08	0.74	0.25	0.54	0.46
0.04	1.29	5.73	166900	4.44	1.20	0.83	0.16	0.40	0.32
0.02	1.26	6.79	189300	5.53	1.26	0.87	0.12	0.31	0.16
Control	1.18	7.86	271233	6.68	1.44	1	0	0	0
1.28	1.21	2.89	31466	1.68	0.36	0.253	0.74	0.93	0.74
0.64	1.22	3.93	56500	2.71	0.66	0.45	0.54	0.83	0.59
0.32	1.21	4.69	73066	3.48	0.79	0.54	0.45	0.77	0.47
0.16	1.18	4.50	91366	3.32	0.90	0.62	0.37	0.70	0.50
0.08	1.25	4.88	125866	3.63	1.06	0.73	0.26	0.56	0.45
0.04	1.20	5.77	160800	4.57	1.18	0.81	0.18	0.43	0.31
0.02	1.20	6.71	182800	5.51	1.24	0.86	0.13	0.34	0.17

IR : Inhibition rate

實驗毒物：Dibenzo[b,i]anthracene

初始細胞密度：15000

MCV：43.16

D(μ m)：4.35

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.85	8.22	292100	7.37	1.48	1.00	0.00	0.00	0.00
1.2	1.06	2.97	50600	1.91	0.61	0.41	0.59	0.87	0.74
0.64	1.02	3.96	88900	2.94	0.89	0.60	0.40	0.73	0.60
0.32	1.11	4.42	98700	3.31	0.94	0.63	0.37	0.70	0.55
0.16	0.98	5.41	144300	4.43	1.13	0.76	0.24	0.53	0.40
0.08	1.12	6.61	247200	5.49	1.40	0.94	0.06	0.16	0.26
0.04	1.15	6.21	277800	5.06	1.46	0.98	0.02	0.05	0.31
0.02	1.06	7.78	282100	6.72	1.47	0.99	0.01	0.04	0.09
Control	0.99	8.43	291600	7.44	1.48	1.00	0.00	0.00	0.00
1.2	1.02	3.28	44500	2.26	0.54	0.37	0.63	0.89	0.70
0.64	1.04	3.98	87300	2.94	0.88	0.59	0.41	0.74	0.60
0.32	0.98	4.66	108200	3.68	0.99	0.67	0.33	0.66	0.51
0.16	1.07	5.63	156100	4.56	1.17	0.79	0.21	0.49	0.39
0.08	1.14	6.76	234100	5.62	1.37	0.93	0.07	0.21	0.24
0.04	1.12	6.45	287600	5.33	1.48	1.00	0.00	0.01	0.28
0.02	1.08	8.02	291200	6.94	1.48	1.00	0.00	0.00	0.07
Control	0.93	8.24	299800	7.31	1.50	1.00	0.00	0.00	0.00
1.2	1.07	2.88	47700	1.81	0.58	0.39	0.61	0.89	0.75
0.64	1.02	3.76	83200	2.74	0.86	0.57	0.43	0.76	0.63
0.32	1.12	4.42	103700	3.30	0.97	0.65	0.35	0.69	0.55
0.16	1.03	4.92	153800	3.89	1.16	0.78	0.22	0.51	0.47
0.08	1.02	5.45	221000	4.43	1.35	0.90	0.10	0.28	0.39
0.04	1.06	6.24	276500	5.18	1.46	0.97	0.03	0.08	0.29
0.02	1.14	8.06	291600	6.92	1.48	0.99	0.01	0.03	0.05
Control	0.92	8.30	294500	7.37	1.49	1.00	0.00	0.00	0.00
1.2	1.05	3.04	47600	1.99	0.58	0.39	0.61	0.88	0.73
0.64	1.03	3.90	86467	2.87	0.88	0.59	0.41	0.74	0.61
0.32	1.07	4.50	103533	3.43	0.97	0.65	0.35	0.68	0.53
0.16	1.03	5.32	151400	4.29	1.16	0.78	0.22	0.51	0.42
0.08	1.09	6.27	234100	5.18	1.37	0.92	0.08	0.22	0.30
0.04	1.11	6.30	280633	5.19	1.46	0.98	0.02	0.05	0.30
0.02	1.09	7.95	288300	6.86	1.48	0.99	0.01	0.02	0.07

IR : Inhibition rate

實驗毒物：UVA-Dibenzo[b,i]anthracene

初始細胞密度：15000

MCV：38.45

D(μ m)：4.188

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	1.02	8.24	288600	7.22	1.48	1.00	0.00	0.00	0.00
1.2	1.33	3.06	37700	1.73	0.46	0.31	0.69	0.92	0.76
0.64	1.23	4.12	74500	2.89	0.80	0.54	0.46	0.78	0.60
0.32	1.19	4.87	102500	3.68	0.96	0.65	0.35	0.68	0.49
0.16	1.35	5.35	143800	4.00	1.13	0.76	0.24	0.53	0.45
0.08	1.27	6.46	219600	5.19	1.34	0.91	0.09	0.25	0.28
0.04	1.16	6.88	244900	5.72	1.40	0.94	0.06	0.16	0.21
0.02	1.26	7.82	278100	6.56	1.46	0.99	0.01	0.04	0.09
Control	1.21	8.12	299400	6.91	1.50	1.00	0.00	0.00	0.00
1.2	1.22	2.98	33500	1.76	0.40	0.27	0.73	0.93	0.75
0.64	1.30	3.97	77800	2.67	0.82	0.55	0.45	0.78	0.61
0.32	1.31	4.46	99700	3.15	0.95	0.63	0.37	0.70	0.54
0.16	1.29	5.23	146300	3.94	1.14	0.76	0.24	0.54	0.43
0.08	1.13	6.64	227500	5.51	1.36	0.91	0.09	0.25	0.20
0.04	1.15	6.96	253900	5.81	1.41	0.94	0.06	0.16	0.16
0.02	1.26	7.88	288300	6.62	1.48	0.99	0.01	0.04	0.04
Control	1.18	7.92	287200	6.74	1.48	1.00	0.00	0.00	0.00
1.2	1.25	3.07	29900	1.82	0.34	0.23	0.77	0.95	0.73
0.64	1.21	4.01	81300	2.80	0.85	0.57	0.43	0.76	0.58
0.32	1.32	4.67	100700	3.35	0.95	0.64	0.36	0.69	0.50
0.16	1.21	5.36	156100	4.15	1.17	0.79	0.21	0.48	0.38
0.08	1.22	6.44	211900	5.22	1.32	0.90	0.10	0.28	0.23
0.04	1.34	6.81	253900	5.47	1.41	0.96	0.04	0.12	0.19
0.02	1.26	7.79	281800	6.53	1.47	0.99	0.01	0.02	0.03
Control	1.14	8.09	291733	6.96	1.48	1.00	0.00	0.00	0.00
1.2	1.27	3.04	33700	1.77	0.40	0.27	0.73	0.93	0.75
0.64	1.25	4.03	77867	2.79	0.82	0.55	0.45	0.77	0.60
0.32	1.27	4.67	100967	3.39	0.95	0.64	0.36	0.69	0.51
0.16	1.28	5.31	148733	4.03	1.15	0.77	0.23	0.52	0.42
0.08	1.21	6.51	219667	5.31	1.34	0.90	0.10	0.26	0.24
0.04	1.22	6.88	250900	5.67	1.41	0.95	0.05	0.15	0.19
0.02	1.26	7.83	282733	6.57	1.47	0.99	0.01	0.03	0.06

IR : Inhibition rate

實驗毒物：Perylene

初始細胞密度：15000

MCV：40.89

D(μ m)：4.275

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc	Initial DO	Final DO	Final cells	Delta DO			IR	IR	IR
mg/L	mg/L	mg/L	cells/ml	mg/L	μ specific	μ relative (Growth Rate)	(Final Yield)	(DO)	
Control	0.58	7.22	245800	6.64	1.40	1.00	0.00	0.00	0.00
1.2	0.79	2.94	31000	2.15	0.36	0.26	0.74	0.93	0.68
0.6	0.82	3.53	51300	2.71	0.61	0.44	0.56	0.84	0.59
0.3	0.92	4.25	71400	3.33	0.78	0.56	0.44	0.76	0.50
0.15	0.74	4.85	100700	4.11	0.95	0.68	0.32	0.63	0.38
0.06	0.75	5.24	131700	4.49	1.09	0.78	0.22	0.49	0.32
0.03	0.86	6.30	163600	5.44	1.19	0.85	0.15	0.36	0.18
Control	0.68	7.45	241200	6.77	1.39	1.00	0.00	0.00	0.00
1.2	0.76	2.63	33300	1.87	0.40	0.29	0.71	0.92	0.72
0.6	0.69	3.19	57000	2.50	0.67	0.48	0.52	0.81	0.63
0.3	0.75	4.35	82400	3.60	0.85	0.61	0.39	0.70	0.47
0.15	0.73	5.12	106500	4.39	0.98	0.71	0.29	0.60	0.35
0.06	0.78	5.31	125400	4.53	1.06	0.76	0.24	0.51	0.33
0.03	0.86	6.32	161300	5.46	1.19	0.86	0.14	0.35	0.19
Control	0.61	7.32	259200	6.71	1.42	1.00	0.00	0.00	0.00
1.2	0.90	2.44	34600	1.54	0.42	0.29	0.71	0.92	0.77
0.6	0.66	3.45	43000	2.79	0.53	0.37	0.63	0.89	0.58
0.3	0.71	4.30	50200	3.59	0.60	0.42	0.58	0.86	0.46
0.15	0.73	4.93	67500	4.20	0.75	0.53	0.47	0.79	0.37
0.06	0.68	5.33	94000	4.65	0.92	0.64	0.36	0.68	0.31
0.03	0.81	6.46	161700	5.65	1.19	0.83	0.17	0.40	0.16
Control	0.62	7.33	248733	6.71	1.40	1.00	0.00	0.00	0.00
1.2	0.82	2.67	32967	1.85	0.39	0.28	0.72	0.92	0.72
0.6	0.72	3.39	50433	2.67	0.60	0.43	0.57	0.85	0.60
0.3	0.79	4.30	68000	3.51	0.75	0.53	0.46	0.77	0.48
0.15	0.73	4.97	91567	4.23	0.89	0.64	0.36	0.67	0.37
0.06	0.74	5.29	117033	4.56	1.02	0.73	0.27	0.56	0.32
0.03	0.84	6.36	162200	5.52	1.19	0.85	0.15	0.37	0.18

IR : Inhibition rate

實驗毒物：UVA-Perylene

初始細胞密度：15000

MCV：39.25

D(μ m)：4.217

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR (Growth Rate)	IR (Final Yield)	IR (DO)
				mg/L	μ specific	μ relative			
Control	0.84	7.78	247200	6.94	1.40	1.00	0.00	0.00	0.00
0.38	1.19	3.44	36300	2.25	0.44	0.32	0.68	0.91	0.68
0.19	1.28	3.58	47900	2.30	0.58	0.41	0.59	0.86	0.67
0.095	1.34	4.74	83900	3.40	0.86	0.61	0.39	0.70	0.51
0.0475	1.32	5.12	109900	3.80	1.00	0.71	0.29	0.59	0.45
0.02375	1.25	5.46	182100	4.21	1.25	0.89	0.11	0.28	0.39
0.0119	1.39	7.21	244300	5.82	1.40	1.00	0.00	0.01	0.16
Control	1.14	7.83	246800	6.69	1.40	1.00	0.00	0.00	0.00
0.38	1.21	3.21	38800	2.00	0.48	0.34	0.66	0.90	0.70
0.19	1.35	3.32	46400	1.97	0.56	0.40	0.60	0.86	0.71
0.095	1.26	4.88	77700	3.62	0.82	0.59	0.41	0.73	0.46
0.0475	1.23	4.97	119400	3.74	1.04	0.74	0.26	0.55	0.44
0.02375	1.27	5.33	195200	4.06	1.28	0.92	0.08	0.22	0.39
0.0119	1.18	7.36	248100	6.18	1.40	1.00	0.00	-0.01	0.08
Control	1.18	7.84	251200	6.66	1.41	1.00	0.00	0.00	0.00
0.38	1.22	3.12	37500	1.90	0.46	0.33	0.67	0.90	0.71
0.19	1.26	3.39	44300	2.13	0.54	0.38	0.62	0.88	0.68
0.095	1.23	4.76	91200	3.53	0.90	0.64	0.36	0.68	0.47
0.0475	1.22	4.95	122100	3.73	1.05	0.74	0.26	0.55	0.44
0.02375	1.24	5.32	204500	4.08	1.31	0.93	0.07	0.20	0.39
0.0119	1.26	7.15	247200	5.89	1.40	0.99	0.01	0.02	0.12
Control	1.05	7.82	248400	6.76	1.40	1.00	0.00	0.00	0.00
0.38	1.21	3.26	37533	2.05	0.46	0.33	0.67	0.90	0.70
0.19	1.30	3.43	46200	2.13	0.56	0.40	0.60	0.87	0.68
0.095	1.28	4.79	84267	3.52	0.86	0.61	0.39	0.70	0.48
0.0475	1.26	5.01	117133	3.76	1.03	0.73	0.27	0.56	0.44
0.02375	1.25	5.37	193933	4.12	1.28	0.91	0.09	0.23	0.39
0.0119	1.28	7.24	246533	5.96	1.40	1.00	0.00	0.01	0.12

IR : Inhibition rate

實驗毒物：Benzo[b]chrysene

初始細胞密度：15000

MCV：43.89

D(μ m)：4.377

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR (Growth Rate)	IR (Final Yield)	IR (DO)
				mg/L	μ specific	μ relative			
Control	0.49	7.77	220800	7.28	1.34	1.00	0.00	0.00	0.00
0.04	0.81	1.11	19200	0.30	0.12	0.09	0.91	0.98	0.96
0.02	0.74	2.38	32500	1.64	0.39	0.29	0.71	0.91	0.77
0.01	0.71	2.21	58200	1.50	0.68	0.50	0.50	0.79	0.79
0.005	0.75	3.27	129800	2.52	1.08	0.80	0.20	0.44	0.65
0.0025	0.86	3.43	158200	2.57	1.18	0.88	0.12	0.30	0.65
0.00125	0.79	4.32	162600	3.53	1.19	0.89	0.11	0.28	0.52
Control	0.42	7.45	198900	7.03	1.29	1.00	0.00	0.00	0.00
0.04	0.63	1.14	30300	0.51	0.35	0.27	0.73	0.92	0.93
0.02	0.81	2.12	34900	1.31	0.42	0.33	0.67	0.89	0.81
0.01	0.72	2.16	70400	1.44	0.77	0.60	0.40	0.70	0.80
0.005	0.81	3.21	139300	2.40	1.11	0.86	0.14	0.32	0.66
0.0025	0.84	3.36	149400	2.52	1.15	0.89	0.11	0.27	0.64
0.00125	0.61	4.44	187200	3.83	1.26	0.98	0.02	0.06	0.46
Control	0.46	7.61	209850	7.16	1.32	1.00	0.00	0.00	0.00
0.04	0.72	1.13	24750	0.41	0.24	0.18	0.81	0.95	0.94
0.02	0.78	2.25	33700	1.48	0.40	0.31	0.69	0.90	0.79
0.01	0.72	2.19	64300	1.47	0.73	0.55	0.45	0.75	0.79
0.005	0.78	3.24	134550	2.46	1.10	0.83	0.17	0.39	0.66
0.0025	0.85	3.40	153800	2.55	1.16	0.88	0.12	0.29	0.64
0.00125	0.70	4.38	174900	3.68	1.23	0.93	0.07	0.18	0.49

IR : Inhibition rate

實驗毒物：UVA-Benzo[b]chrysene

初始細胞密度：15000

MCV：43.32

D(μ m)：4.358

initial PH：7.5

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.84	8.12	225700	7.28	1.36	1.00	0.00	0.00	0.00
0.04	1.24	1.67	21600	0.43	0.18	0.13	0.87	0.97	0.94
0.02	1.21	2.88	34700	1.67	0.42	0.31	0.69	0.91	0.77
0.01	1.26	2.76	61600	1.50	0.71	0.52	0.48	0.78	0.79
0.005	1.26	3.77	127700	2.51	1.07	0.79	0.21	0.47	0.66
0.0025	1.23	3.89	164100	2.66	1.20	0.88	0.12	0.29	0.63
0.00125	1.19	4.77	180200	3.58	1.24	0.92	0.08	0.22	0.51
Control	0.97	8.17	234100	7.20	1.37	1.00	0.00	0.00	0.00
0.04	1.21	1.88	24600	0.67	0.25	0.18	0.82	0.96	0.91
0.02	1.19	2.86	33900	1.67	0.41	0.30	0.70	0.91	0.77
0.01	1.16	2.84	59700	1.68	0.69	0.50	0.50	0.80	0.77
0.005	1.23	3.82	119400	2.59	1.04	0.75	0.25	0.52	0.64
0.0025	1.17	3.94	151600	2.77	1.16	0.84	0.16	0.38	0.62
0.00125	1.24	4.72	179300	3.48	1.24	0.90	0.10	0.25	0.52
Control	1.10	8.08	224100	6.98	1.35	1.00	0.00	0.00	0.00
0.04	1.12	1.99	22900	0.87	0.21	0.16	0.84	0.96	0.88
0.02	1.15	2.84	34400	1.69	0.42	0.31	0.69	0.91	0.76
0.01	1.21	2.93	58500	1.72	0.68	0.50	0.50	0.79	0.75
0.005	1.22	3.89	135800	2.67	1.10	0.81	0.19	0.42	0.62
0.0025	1.17	3.99	149900	2.82	1.15	0.85	0.15	0.35	0.60
0.00125	1.13	4.81	173500	3.68	1.22	0.91	0.09	0.24	0.47
Control	0.97	8.12	227967	7.15	1.36	1.00	0.00	0.00	0.00
0.04	1.19	1.85	23033	0.66	0.21	0.16	0.84	0.96	0.91
0.02	1.18	2.86	34333	1.68	0.41	0.30	0.70	0.91	0.77
0.01	1.21	2.84	59933	1.63	0.69	0.51	0.49	0.79	0.77
0.005	1.24	3.83	127633	2.59	1.07	0.79	0.21	0.47	0.64
0.0025	1.19	3.94	155200	2.75	1.17	0.86	0.14	0.34	0.62
0.00125	1.19	4.77	177667	3.58	1.24	0.91	0.09	0.24	0.50

IR : Inhibition rate

實驗毒物：Napthalene

初始細胞密度：15000

MCV：41.12

D(μ m)：4.28

initial PH：7.5

EDTA(%)：0%

T($^{\circ}$ C)：24

Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate)			
Control	0.46	7.98	224300	7.52	1.35	1.00	0.00	0.00	0.00
10.049	1.03	1.33	27500	0.30	0.30	0.22	0.78	0.94	0.96
7.5	0.82	1.27	29700	0.45	0.34	0.25	0.75	0.93	0.94
5.024	0.63	2.75	41700	2.12	0.51	0.38	0.62	0.87	0.72
3.837	1.03	3.81	75100	2.78	0.81	0.60	0.40	0.71	0.63
2.558	0.89	6.56	113400	5.67	1.01	0.75	0.25	0.53	0.25
1.279	0.83	7.35	179900	6.52	1.24	0.92	0.08	0.21	0.13
Control	0.55	8.12	218100	7.57	1.34	1.00	0.00	0.00	0.00
10.049	1.19	1.60	28400	0.41	0.32	0.24	0.76	0.93	0.95
7.5	0.82	1.12	34200	0.30	0.41	0.31	0.69	0.91	0.96
5.024	0.53	2.96	55300	2.43	0.65	0.49	0.51	0.80	0.68
3.837	0.66	4.06	95900	3.40	0.93	0.69	0.31	0.60	0.55
2.558	0.70	6.43	110900	5.73	1.00	0.75	0.25	0.53	0.24
1.279	0.92	7.41	185200	6.49	1.26	0.94	0.06	0.16	0.14
Control	0.78	7.73	227500	6.95	1.36	1.00	0.00	0.00	0.00
10.049	1.23	1.94	36300	0.71	0.44	0.33	0.67	0.90	0.90
7.5	0.69	1.10	34700	0.41	0.42	0.31	0.69	0.91	0.94
5.024	0.86	2.85	43300	1.99	0.53	0.39	0.61	0.87	0.71
3.837	0.72	4.15	94700	3.43	0.92	0.68	0.32	0.62	0.51
2.558	0.92	6.39	89800	5.47	0.89	0.66	0.34	0.65	0.21
1.279	0.88	7.39	203900	6.51	1.30	0.96	0.04	0.11	0.06
Control	0.60	7.94	223300	7.35	1.35	1.00	0.00	0.00	0.00
10.049	1.15	1.62	30733	0.47	0.35	0.26	0.73	0.92	0.94
7.5	0.78	1.16	32867	0.39	0.39	0.29	0.71	0.91	0.95
5.024	0.67	2.85	46767	2.18	0.56	0.42	0.58	0.85	0.70
3.837	0.80	4.01	88567	3.20	0.88	0.66	0.34	0.65	0.56
2.558	0.84	6.46	104700	5.62	0.97	0.72	0.28	0.57	0.23
1.279	0.88	7.38	189667	6.51	1.27	0.94	0.06	0.16	0.11

IR : Inhibition rate

實驗毒物：UVA-NAP

初始細胞密度：15000

MCV：39.77

D(μ m)：4.236

initial PH：7.3

EDTA(%)：0%

T($^{\circ}$ C)：24

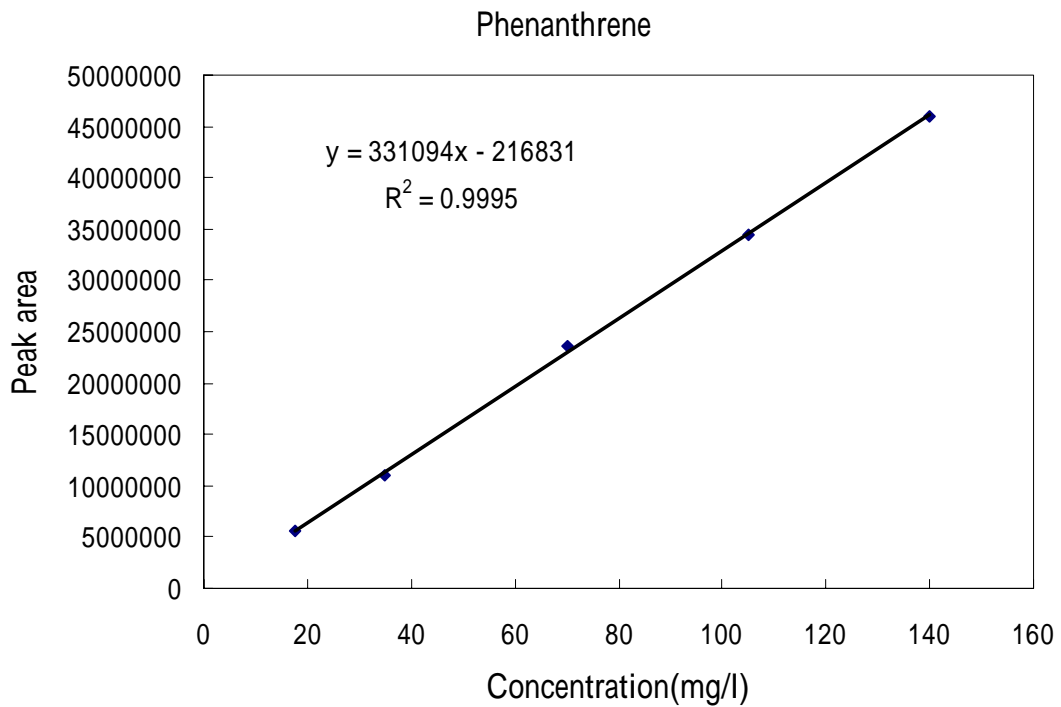
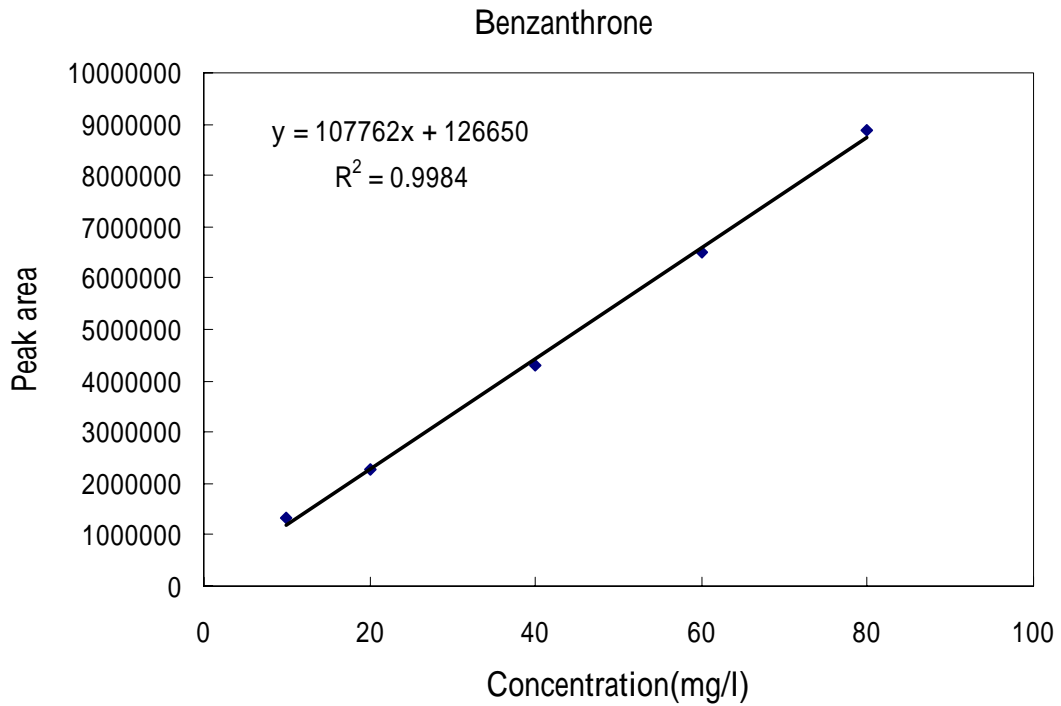
Test duration: 48hr

Conc mg/L	Initial DO mg/L	Final DO mg/L	Final cells cells/ml	Delta DO			IR	IR	IR
				mg/L	μ specific	μ relative (Growth Rate) (Final Yield) (DO)			
Control	1.39	7.47	311400	6.08	1.52	1.00	0.00	0.00	0.00
10	1.37	2.54	33700	1.17	0.40	0.27	0.73	0.94	0.81
7.5	1.42	2.58	48200	1.16	0.58	0.38	0.62	0.89	0.81
5	1.36	3.76	73300	2.40	0.79	0.52	0.48	0.80	0.61
3.8	1.33	4.48	117400	3.15	1.03	0.68	0.32	0.65	0.48
2.5	1.36	5.12	156700	3.76	1.17	0.77	0.23	0.52	0.38
1.3	1.42	6.17	189800	4.75	1.27	0.84	0.16	0.41	0.22
Control	1.33	7.35	322700	6.02	1.53	1.00	0.00	0.00	0.00
10	1.41	2.62	34100	1.21	0.41	0.27	0.73	0.94	0.80
7.5	1.35	2.73	49800	1.38	0.60	0.39	0.61	0.89	0.77
5	1.38	3.84	76500	2.46	0.81	0.53	0.47	0.80	0.59
3.8	1.31	4.46	123100	3.15	1.05	0.69	0.31	0.65	0.48
2.5	1.29	5.35	167200	4.06	1.21	0.79	0.21	0.51	0.33
1.3	1.34	6.29	191200	4.95	1.27	0.83	0.17	0.43	0.18
Control	1.34	7.43	309800	6.09	1.51	1.00	0.00	0.00	0.00
10	1.37	2.57	33900	1.20	0.41	0.27	0.73	0.94	0.80
7.5	1.25	2.71	49900	1.46	0.60	0.40	0.60	0.88	0.76
5	1.33	3.81	77600	2.48	0.82	0.54	0.46	0.79	0.59
3.8	1.38	4.49	128600	3.11	1.07	0.71	0.29	0.61	0.49
2.5	1.34	5.44	161800	4.10	1.19	0.79	0.21	0.50	0.33
1.3	1.25	6.31	194500	5.06	1.28	0.85	0.15	0.39	0.17
Control	1.35	7.42	314633	6.06	1.52	1.00	0.00	0.00	0.00
10	1.38	2.58	33900	1.19	0.41	0.27	0.73	0.94	0.80
7.5	1.34	2.67	49300	1.33	0.59	0.39	0.61	0.89	0.78
5	1.36	3.80	75800	2.45	0.81	0.53	0.47	0.80	0.60
3.8	1.34	4.48	123033	3.14	1.05	0.69	0.31	0.64	0.48
2.5	1.33	5.30	161900	3.97	1.19	0.78	0.22	0.51	0.34
1.3	1.34	6.26	191833	4.92	1.27	0.84	0.16	0.41	0.19

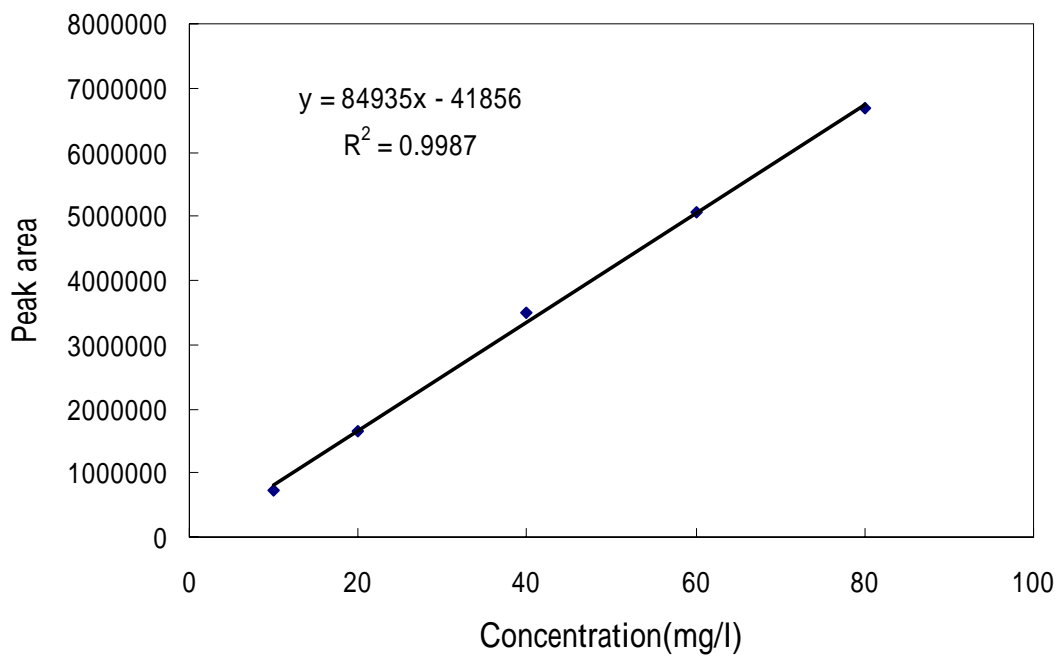
IR : Inhibition rate

附錄二 儀器分析

HPLC 檢量線：



Fluoranthene



Anthracene

