

Table S1. Statistical analysis results of the different measured factors between the control and MIA induction groups

IL1 β (pg/ml)		MIA (weeks)				
		Control	2	4	6	10
IL1 β (pg/ml)	Mean	42.2	47.4	55.4	52.2	51
	SD	7.65	4.03	8.15	4.98	9.46
	P		1	0.038	0.26	0.08
	P1			1	1	1
TNF α (pg/ml)	Mean	27.5	43.6	73.5	74	71.7
	SD	3.5	5.22	4.93	5.22	3.3
	P		0.48	0.001	0.001	0.001
	P1			0.1	0.094	0.122
ADAMTS4 (pg/ml)	Mean	294.6	361.4	414.3	395.6	456.2
	SD	53.5	27.29	80.83	58.53	61.83
	P		0.645	0.869	0.153	0.001
	P1			0.994	0.967	0.289
β -G (pg/ml)	Mean	189.4	219.5	277.5	224.8	269.1
	SD	24.08	18.46	17.69	25.76	26.87
	P		0.128	<0.001*	0.051	<0.001*
	P1			<0.001*	0.992	0.003*
MDA (nmol/ml)	Mean	0.43	1.21	2.83	1.99	2.26
	SD	0.35	0.67	1.72	1.36	0.92
	P		0.159	0.001*	0.014*	0.002*
	P1			0.057	0.297	0.085
GSH (mg/dl)	Mean	41.52	25.93	24.66	26.19	22.09
	SD	2.23	6.2	3.03	2.77	2.45
	P		<0.001*	<0.001*	<0.001*	<0.001*
	P1			0.965	1	0.302
MMP-3 (ng/ml)	Mean	1.51	2.09	2.04	1.99	2.15
	SD	0.15	0.2	0.18	0.16	0.18
	P		<0.001*	<0.001*	<0.001*	<0.001*
	P1			0.979	0.847	0.96
ACP (U/L)	Mean	4.94	6.21	11.36	8.53	6.41
	SD	1.49	1.84	3.26	4.19	1.6
	P		0.903	0.001*	0.12	0.847
	P1			0.010*	0.502	1

SD: Standard Deviation. The mean differences were significant when P, P1 < 0.05. The comparison between groups was done by a one-way F-test (ANOVA) test. The comparison for pairwise was done by post hoc test (Tukey). p: probability value for comparing between Control and each other groups. p1: probability value for comparing between MIA induced 2 weeks and each other groups.

Table S2. Statistical analysis results and significance of different measured factors between the control group, MIA induction group, and MIA+Alginate groups.

		Control	MIA+Alginate (weeks)			
			MIA (week) 2	2	4	8
IL1β (pg/ml)	Mean	42.2	47.4	39.2	41.9	40.5
	SD	7.65	4.03	6.23	7.03	8.58
	P		1	1	1	1
	P1			0.94	1	1
TNF α (pg/ml)	Mean	27.5	43.6	34.1	30.3	27.9
	SD	3.5	5.22	3.47	4.91	3.86
	P		0.48	0.011	0.691	0.999
	P1			0.834	0.635	0.497
ADAMTS4 (pg/ml)	Mean	294.6	361.4	306	307.2	311.3
	SD	53.5	27.29	14.29	46.88	47.81
	P		0.141	0.993	0.99	0.945
	P1			0.413	0.413	0.436
β-G (pg/ml)	Mean	189.4	219.5	216.9	207.9	197.3
	SD	24.08	18.46	13.56	39.26	22.49
	P		0.193	0.269	0.646	0.976
	P1			1	0.908	0.476
MDA (nmol/ml)	Mean	0.43	1.21	0.95	0.94	0.52
	SD	0.35	0.67	0.24	0.94	0.13
	P		0.014*	0.018*	0.256	0.825
	P1			0.927	0.183	0.025*
GSH (mg/dl)	Mean	41.52	25.93	33.62	34.38	38.57
	SD	2.23	6.2	7.95	5.69	5.48
	P		<0.001*	0.108	0.173	0.875
	P1			0.124	0.075	0.003*
MMP-3 (ng/ml)	Mean	1.51	2.09	1.57	1.6	1.51
	SD	0.15	0.2	0.1	0.09	0.07
	P		<0.001*	0.934	0.766	1
	P1			<0.001*	<0.001*	<0.001*
ACP (U/L)	Mean	4.94	6.21	9.92	4.82	4.34
	SD	1.49	1.84	5.15	2.17	1.81
	P		0.918	0.020*	1	0.994
	P1			0.131	0.889	0.734

SD: Standard Deviation The mean differences are significant when P, P1 < 0.05. The comparison between groups was done by one-way (F-test) ANOVA test. The comparison for pairwise was done by post hoc test (Tukey). p: probability value for comparing between **Control** and each other groups. p1: probability value for comparing between MIA induced 2 weeks and each other groups. *: Statistically significant at $p \leq 0.05$.

Graphical Abstract

