

Appendix S3A. Multi-way ANOVA (MANOVA) to test the effects of time, type of tissue, treatment and their interactions on the activities of nitric oxide in the fat body, plasma, and haemocytes of 3rd instar *Sarcophaga argyrostoma* after injection of *Microccus luteus*, EBIs (Dex, Ibu, and Phe), or biogenic monoamines (OA and 5-HT) with the different sort of combined treatments

	Source	SSIII	df	MS	F	p		Source	SSIII	df	MS	F	p
Dex	Intercept	709.3	1	709.3	853459.8	0.0001	OA	Intercept	15408.5	1	15408.5	44530.3	0.0001
	Time	10.8	5	2.2	2599.1	0.0001		Time	395.1	5	79.0	228.4	0.0001
	Tissue	781.7	2	390.8	470256.6	0.0001		Tissue	16612.8	2	8306.4	24005.4	0.0001
	Treatment	2.1	1	2.1	2583.7	0.0001		Treatment	846.6	1	846.6	2446.7	0.0001
	Time * Tissue	10.6	10	1.1	1274.8	0.0001		Time * Tissue	414.6	10	41.5	119.8	0.0001
	Time * Treatment	0.3	5	0.1	64.5	0.0001		Time * Treatment	402.6	5	80.5	232.7	0.0001
	Tissue * Treatment	1.6	2	0.8	983.4	0.0001		Tissue * Treatment	1034.1	2	517.1	1494.3	0.0001
	Time * Tissue * Treatment	0.3	10	0.0	38.5	0.0001		Time * Tissue * Treatment	429.6	10	43.0	124.2	0.0001
	Error	0.1	144	0.0				Error	49.8	144	0.3		
Ibu	Intercept	937.6	1	937.6	309902.8	0.0001	5-HT	Intercept	9491.6	1	9491.6	60569.4	0.0001
	Time	13.3	5	2.7	877.1	0.0001		Time	636.1	5	127.2	811.8	0.0001
	Tissue	1010.9	2	505.5	167067.8	0.0001		Tissue	11681.3	2	5840.7	37271.4	0.0001
	Treatment	7.4	1	7.4	2454.3	0.0001		Treatment	1439.6	1	1439.6	9186.8	0.0001
	Time * Tissue	13.5	10	1.3	445.4	0.0001		Time * Tissue	761.9	10	76.2	486.2	0.0001
	Time * Treatment	0.7	5	0.1	43.7	0.0001		Time * Treatment	252.8	5	50.6	322.6	0.0001
	Tissue * Treatment	8.3	2	4.2	1373.1	0.0001		Tissue * Treatment	2050.0	2	1025.0	6541.0	0.0001
	Time * Tissue * Treatment	0.7	10	0.1	24.2	0.0001		Time * Tissue * Treatment	307.2	10	30.7	196.0	0.0001
	Error	0.4	144	0.0				Error	22.6	144	0.2		
Phe	Intercept	627.3	1	627.3	124248.1	0.0001							
	Time	22.5	5	4.5	891.8	0.0001							
	Tissue	685.2	2	342.6	67849.7	0.0001							
	Treatment	4.9	1	4.9	961.4	0.0001							
	Time * Tissue	28.0	10	2.8	554.4	0.0001							
	Time * Treatment	1.2	5	0.2	48.4	0.0001							
	Tissue * Treatment	5.6	2	2.8	558.1	0.0001							
	Time * Tissue * Treatment	1.9	10	0.2	38.0	0.0001							
	Error	0.7	144	0.0									

Values with $p < 0.0001$: represent significant, whereas those with $p > 0.05$ insignificant effect.

*Tests of between-subjects effects are herein presented.

SS: Type III Sum of Squares; MS: Mean Square.

Appendix S3B. Multi-way ANOVA (MANOVA) to test the effects of time, type of tissue, treatment and their interactions on the activities of lysozyme in the fat body, plasma, and haemocytes of 3rd instar *Sarcophaga argyrostoma* after injection of *Micrococcus luteus*, EBIs (Dex, Ibu, and Phe), or biogenic monoamines (OA and 5-HT) with the different sort of combined treatments

	Source	SSIII	df	MS	F	p		Source	SSIII	df	MS	F	p
Dex	Intercept	9142.9	1	9142.9	4075.0	0.0001	OA	Intercept	81751.6	1	81751.6	5612.6	0.0001
	Time	5932.1	5	1186.4	528.8	0.0001		Time	13680.3	5	2736.1	187.8	0.0001
	Tissue	10209.9	2	5105.0	2275.3	0.0001		Tissue	82590.1	2	41295.0	2835.1	0.0001
	Treatment	375.8	1	375.8	167.5	0.0001		Treatment	3606.5	1	3606.5	247.6	0.0001
	Time * Tissue	6783.5	10	678.4	302.3	0.0001		Time * Tissue	14976.0	10	1497.6	102.8	0.0001
	Time * Treatment	112.6	5	22.5	10.0	0.0001		Time * Treatment	1869.0	5	373.8	25.7	0.0001
	Tissue * Treatment	333.2	2	166.6	74.2	0.0001		Tissue * Treatment	3929.3	2	1964.6	134.9	0.0001
	Time * Tissue * Treatment	159.2	10	15.9	7.1	0.0001		Time * Tissue * Treatment	3192.5	10	319.2	21.9	0.0001
	Error	323.1	144	2.2				Error	2097.4	144	14.6		
Ibu	Intercept	10011.8	1	10011.8	3392.5	0.0001	5-HT	Intercept	49440.6	1	49440.6	3952.9	0.0001
	Time	4545.8	5	909.2	308.1	0.0001		Time	10169.7	5	2033.9	162.6	0.0001
	Tissue	10956.2	2	5478.1	1856.2	0.0001		Tissue	50517.3	2	25258.6	2019.5	0.0001
	Treatment	1224.4	1	1224.4	414.9	0.0001		Treatment	5630.4	1	5630.4	450.2	0.0001
	Time * Tissue	6037.6	10	603.8	204.6	0.0001		Time * Tissue	11047.5	10	1104.7	88.3	0.0001
	Time * Treatment	1116.1	5	223.2	75.6	0.0001		Time * Treatment	2066.8	5	413.4	33.0	0.0001
	Tissue * Treatment	1537.0	2	768.5	260.4	0.0001		Tissue * Treatment	6325.9	2	3163.0	252.9	0.0001
	Time * Tissue * Treatment	1715.7	10	171.6	58.1	0.0001		Time * Tissue * Treatment	2400.7	10	240.1	19.2	0.0001
	Error	425.0	144	3.0				Error	1801.1	144	12.5		
Phe	Intercept	8524.6	1	8524.6	3800.1	0.0001							
	Time	4206.2	5	841.2	375.0	0.0001							
	Tissue	8887.3	2	4443.6	1980.9	0.0001							
	Treatment	753.7	1	753.7	336.0	0.0001							
	Time * Tissue	4719.8	10	472.0	210.4	0.0001							
	Time * Treatment	176.9	5	35.4	15.8	0.0001							
	Tissue * Treatment	723.0	2	361.5	161.2	0.0001							
	Time * Tissue * Treatment	193.1	10	19.3	8.6	0.0001							
	Error	323.0	144	2.2									

Values with $p < 0.0001$: represent significant, whereas those with $p > 0.05$ insignificant effect.

*Tests of between-subjects effects are herein presented.

SS: Type III Sum of Squares; MS: Mean Square.