

Title: Phenotypic plasticity in Adélie penguins' (*Pygoscelis adeliae*) physiology and immunity under anthropogenic pressure: a proteomic and biochemical scenario

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Supplementary Table 2. GLM modelling to assess variation of nutritional and health status parameters in breeding Adélie Penguin (*P. adeliae*) from areas with different anthropogenic pressure. The level of anthropogenic pressure in the breeding area (HDZ and LDZ) and the season (2014-2015 and 2015-2016) were considered as fixed factors. The sampling date within the season (6, 7, 8, 9 and 10 days after egg hatching) was considered as covariate. The response variables were body mass, triacylglycerol, total proteins, albumin, uric acid, IgY, hematocrit, hemagglutination titer and γ -, α 1-, α 2- and β -globulins. For each response variable, the statistical result of the model (F, p-value and R-squared) is shown.

Response variable	Factor	Est	t-value	p-value	Statistical model																																																																																																																																		
					F	p-value	R-squared																																																																																																																																
Body mass	season ₂₀₁₅₋₂₀₁₆	177.55	2.207	0.051	4.329	0.008	0.188																																																																																																																																
	Day	27.950	0.934	0.354				Triacylglycerol	season ₂₀₁₅₋₂₀₁₆	0.057	0.561	0.577	3.357	0.025	0.152	Day	-0.0005	-0.014	0.989	Total proteins	season ₂₀₁₅₋₂₀₁₆	-0.059	-0.573	0.568	3.700	0.016	0.165	Day	-0.056	0.03834	0.149	Albumin	season ₂₀₁₅₋₂₀₁₆	0.0003	0.035	0.972	8.588	0.021	0.278	Day	-0.003	-0.937	0.353	Uric acid	season ₂₀₁₅₋₂₀₁₆	0.177	0.208	0.251	8.640	0.018	0.279	Day	-0.028	-1.820	0.0741	IgY	season ₂₀₁₅₋₂₀₁₆	0.015	0.971	0.335	4.066	0.011	0.134	Day	-0.004	-0.752	0.455	Hematocrit	season ₂₀₁₅₋₂₀₁₆	0.558	0.373	0.711	9.931	0.021	0.395	Day	-2.295	-3.268	0.062	Hemagglutination	season ₂₀₁₅₋₂₀₁₆	-0.031	-0.075	0.941	11.070	0.002	0.555	Day	-0.149	-0.766	0.448	γ -globulins	season ₂₀₁₅₋₂₀₁₆	0.729	1.584	0.119	9.222	0.001	0.294	Day	0.001	0.009	0.993	α 1-globulins	season ₂₀₁₅₋₂₀₁₆	-0.604	-1.195	0.296	2.140	0.131	0.381	Day	0.329	1.768	0.082	α 2-globulins	season ₂₀₁₅₋₂₀₁₆	-0.487	-1.070	0.289	2.241	0.093	0.049	Day	0.052	0.308	0.759	β -globulins	season ₂₀₁₅₋₂₀₁₆	0.073	0.227	0.820	1.687	0.170	0.120
Triacylglycerol	season ₂₀₁₅₋₂₀₁₆	0.057	0.561	0.577	3.357	0.025	0.152																																																																																																																																
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