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Supporting Material

An Integrated Model of Eicosanoid Metabolism and Signaling Based on Lipidomics Flux Analysis

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to

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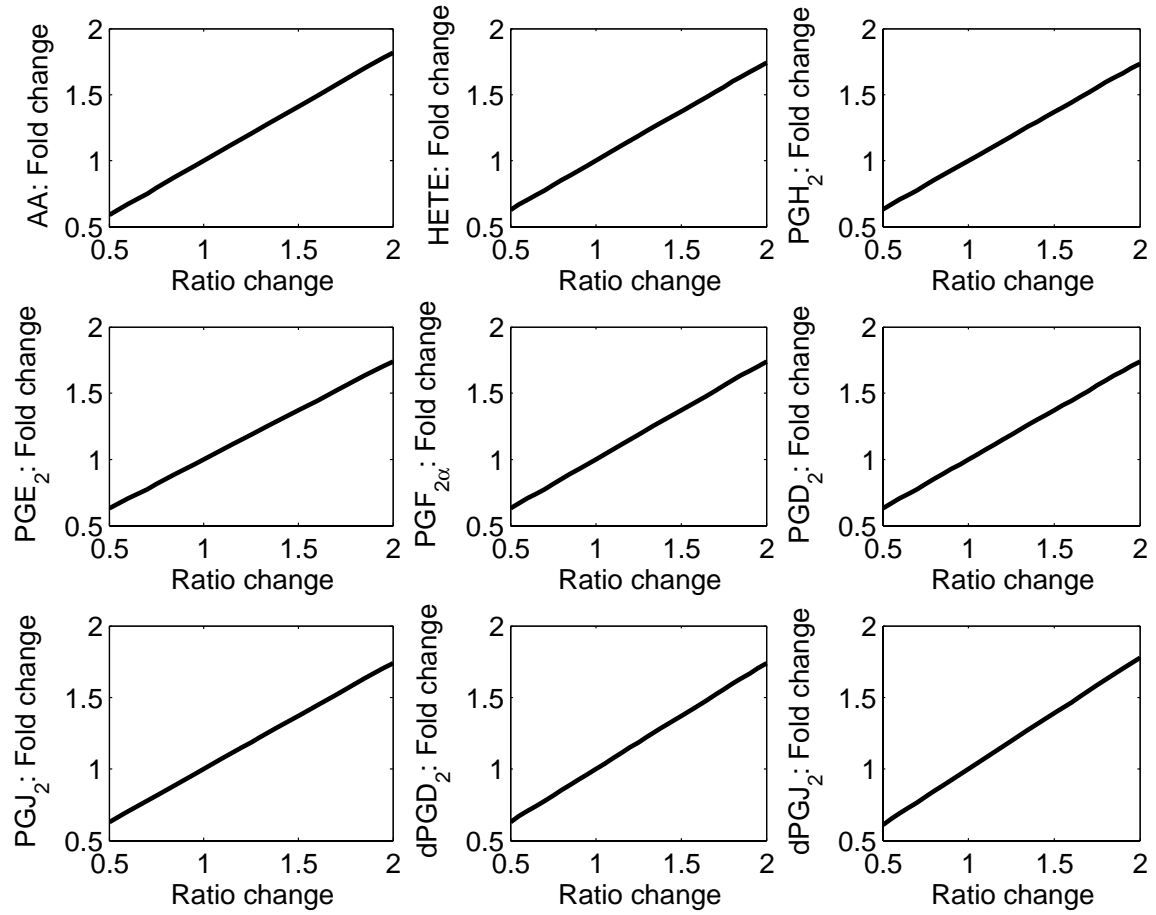


Figure S1. Result of parametric sensitivity analysis for the parameter k_1 ([LPS] FA \rightarrow AA). X-axis: ratio of perturbed value of the parameter to the original (optimized) value of the parameter; Y-axis: fold-change in the maximum-value of state variables (metabolites).

Table S1. Results of parametric sensitivity analysis*. The sensitivity was calculated as the slope of the sensitivity curves (e.g. Fig. S1) at the optimized value of the parameters.

	AA	HETE	PGH₂	PGE₂	PGF_{2α}	PGD₂	PGJ₂	dPGD₂	dPGJ₂
K₁	0.82	0.75	0.74	0.74	0.74	0.75	0.74	0.74	0.78
K₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K₃	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K₄	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
k₅	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
k₆	0.22	0.19	0.20	0.19	0.19	0.19	0.19	0.19	0.20
k₇	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
k₈	-0.01	0.98	0.00	-0.04	-0.04	-0.03	-0.04	-0.04	-0.03
k₉	0.00	-0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
k₁₀	-0.04	-0.11	0.21	0.04	0.04	0.11	0.06	0.07	0.10
k₁₁	-0.05	-0.04	0.15	0.01	0.01	0.00	0.01	0.01	0.02
k₁₂	-0.11	-0.32	0.52	0.10	0.10	0.30	0.16	0.18	0.26
k₁₃	0.00	0.00	-0.05	0.94	-0.06	-0.06	-0.06	-0.06	-0.06
k₁₄	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
k₁₅	0.00	0.00	-0.02	-0.02	0.98	-0.02	-0.02	-0.02	-0.02
k₁₆	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
k₁₇	0.01	0.01	-0.83	-0.92	-0.92	0.09	0.09	0.09	0.11
k₁₈	0.00	0.00	0.00	0.00	0.00	-0.28	0.60	-0.38	0.72
k₁₉	0.00	0.00	0.00	0.00	0.00	-0.15	-0.21	0.80	-0.18
k₂₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.15	0.00
k₂₁	0.00	0.00	0.00	0.00	0.00	0.00	-0.34	0.00	0.78
k₂₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.64

* Unit of parameter sensitivity is fold change in peak-height of metabolites / ratio change in parameter value.