

SUPPLEMENTARY MATERIAL

Application of response surface methodology to evaluate photodynamic inactivation mediated by eosin Y and 530 nm LED against *Staphylococcus aureus*.

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Table S1. Analysis of variance for the evaluation of the second-order polynomial model.

Source of variation	Sum of squares	df	Mean square	F-ratio	p-value
Model	5.9276	3	1.9759	40.92	0.000034
Residual	0.3863	8	0.0483		
Lack of fit	0.2738	5	0.0548	1.46055	0.401258
Pure error	0.1125	3	0.0375		
Total	6.3138	11			

Coefficient of determination (R^2) = 0.93882;

Adjusted coefficient of determination (R^2_{adj}) = 0.91588

Table S2. Regression coefficients of the mathematical model to predict the photoinhibitory effects of eosin Y and green LED light against *S. aureus*.

Independent variables*	Regression coefficient	Standard error	t-value	p-value
X_1	-0.667319	0.088536	-7.53723	0.000283
X_1^2	-0.286250	0.098987	-2.89180	0.027628
X_2	-0.472864	0.088536	-5.34091	0.001760
X_2^2	0.038750	0.098987	0.39147	0.708977
X_1X_2	0.020000	0.250419	0.07987	0.938941

* X_1 – linear effect of PS concentration; X_2 – linear effect of illumination time; X_1^2 – quadratic effect of PS concentration; X_2^2 – quadratic effect of illumination time; X_1X_2 - interaction between PS concentration and illumination time.

Table S3. Analysis of variance for the significant terms in the model

Independent variables*	Sum of squares	df	Mean square	F-ratio	p-value
X_1	3.562513	1	3.562513	95.02147	0.002294
X_1^2	0.576240	1	0.576240	15.36982	0.029517
X_2	1.788805	1	1.788805	47.71207	0.006219

* X_1 – linear effect of PS concentration; X_2 – linear effect of illumination time; X_1^2 – quadratic effect of PS concentration; X_2^2 .