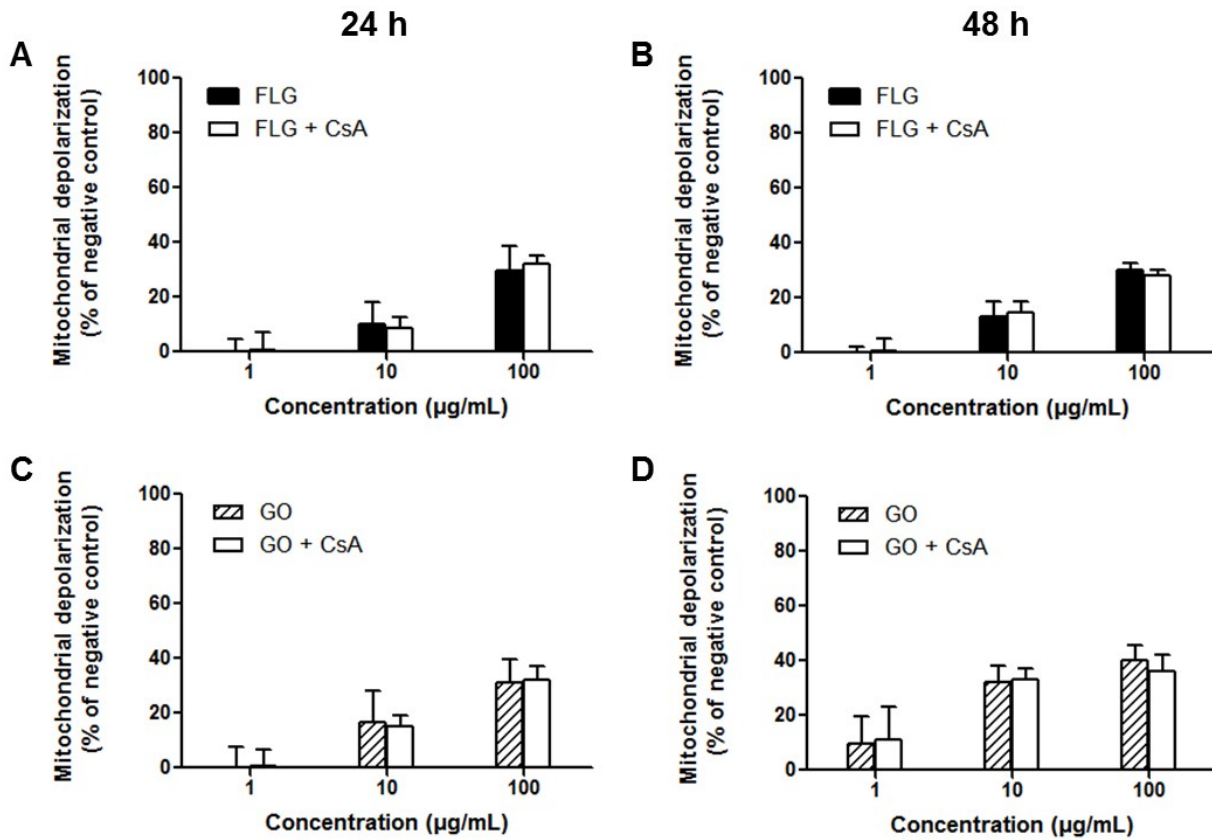


Supporting Information 1. Total reflection X-Ray fluorescence (TXRF) of FLG.

Element	Line	Conc./ mg/l	Sigma/ mg/l	RSD/ %	LLD/ mg/l	Net area	Backgr.	Chi
Al	K12	Not det.			0	3	1234	1.07
Si	K12	56.87	0.33	0.6	0.17	33841	1191	3.42
P	K12	Not det.			0.08	1	1163	2.23
S	K12	1.034	0.031	3.0	0.046	2259	1103	1.01
Cl	K12	0.053	0.013	25.5	0.027	190	1074	1.33
K	K12	0.134	0.007	5.1	0.012	1056	902	1.03
Ca	K12	0.687	0.010	1.4	0.009	6535	842	1.19
Ti	K12	2.836	0.013	0.5	0.006	51550	1279	3.23
Cr	K12	0.010	0.001	14.7	0.003	270	653	1.35
Mn	K12	Not det.			0.002	4	592	0.78
Fe	K12	0.026	0.001	4.2	0.002	1153	608	0.99
Co	K12	Not det.			0.002	7	644	1.88
Ni	K12	0.004	0.001	18.0	0.001	234	764	2.60
Cu	K12	0.010	0.001	6.8	0.001	767	959	1.42
Zn	K12	0.033	0.001	2.5	0.001	2890	1111	1.41
Ga (IS)	K12	2.000	0.005	0.2	0.002	200367	2786	22.45
As	K12	Not det.			0.001	21	474	1.44
Br	K12	0.004	0.000	7.4	0.000	515	464	1.50
Sr	K12	Not det.			0.001	1	1268	1.05
Pb	L1	Not det.			0.001	1	428	1.74

Supporting Information 2. Role of MPTP opening in the mitochondrial depolarization in HaCaT cells exposed to FLG (A-B) or GO (C-D). HaCaT cells were pre-exposed to 2.0×10^{-7} M CsA for 1 h and then exposed to GBNs and CsA for 24 or 48 h. Mitochondrial membrane depolarization induced by FLG or GO in the presence of CsA are compared to that induced by FLG or GO alone. Results are presented as % of fluorescence shift with respect to the negative control (cells not exposed to GBNs). Results are the mean \pm SE of 3 independent experiments performed in triplicate. No statistical differences were observed between cells exposed to GBNs with or without CsA (Two-way ANOVA and Bonferroni's post test).



Supporting Information 3. ROS production induced by FLG (A) and GO (B) in cell-free conditions. FLG or GO (0.4 – 100 $\mu\text{g/mL}$) were dissolved in culture medium without cells and ROS production was evaluated by DCFDA assay after different time intervals up to 72 h. Results are the mean \pm SE of 3 independent results and are expressed as % of ROS production with respect to the negative control (cell medium with DCFDA w/o FLG or GO). Statistical differences: ** $p < 0.01$; *** $p < 0.001$ (Two-way ANOVA and Bonferroni's post test).

