

1 **Supplemental Data**

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Variable	Mean (ppb)
CO	700
H <sub>2</sub> S	10.5
NO <sub>2</sub>	21.9
SO <sub>2</sub>	2.6
O <sub>3</sub>	35.7

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4 Table S1. Daily average concentrations of the available ambient air pollutants in  
5 Edmonton, Alberta, Canada (1 April 2008–31 March 2014).

6 Air pollution data were obtained from the Clean Air Strategic Alliance (CASA)  
7 data warehouse (<http://www.envinfo.gov.ab.ca/AQHI/>). Daily mean values of ambient  
8 concentrations of NO<sub>2</sub>, O<sub>3</sub>, CO, and SO<sub>2</sub> were calculated using hourly concentrations  
9 obtained from three continuous monitoring stations within the city of Edmonton. The  
10 monitors are part of the National Air Pollution Surveillance Network maintained by  
11 Environment Canada.

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Sample	no light exposure (5µm scan)	1 week exposure (5µm scan)	2 weeks exposure (5µm scan)	4 weeks exposure (5µm scan)
Roughness RMS (nm)	26 ± 0.2	28 ± 0.5	35 ± 0.02	36.5 ± 0.05

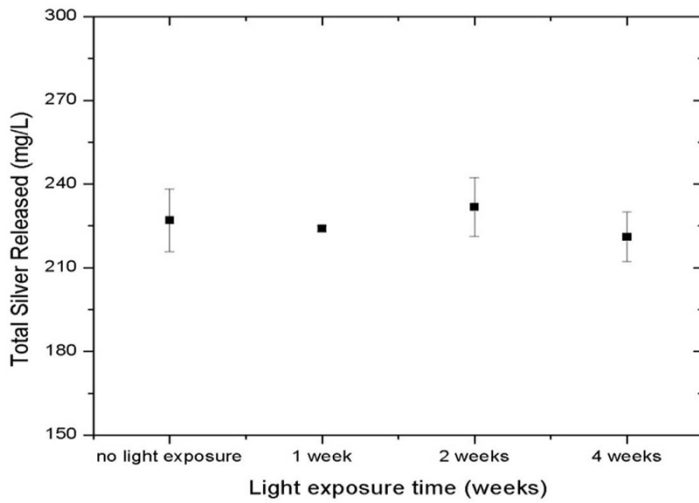
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2 Table S2. Surface roughness (RMS) of nanocrystalline silver samples as determined  
3 from the AFM experiments.

Sample	Ag <sub>2</sub> O (111)			Ag (111) + Ag <sub>2</sub> O (200)			Ag (200)		
	2θ	FWHM	Size(nm)	2θ	FWHM	Size(nm)	2θ	FWHM	Size(nm)
no light exposure	38.58	0.58	17.66± 0.02	44.70	0.54	19.32± 0.01	51.99	0.71	15.18± 0.01
1 week exposure	38.51	0.64	16.02± 0.07	44.63	0.52	19.91± 0.08	52.02	0.68	15.81± 0.02
2 weeks exposure	38.49	0.64	15.94± 0.05	44.71	0.54	19.36± 0.02	52.21	0.53	20.32± 0.20
4 weeks exposure	38.66	0.70	15.00± 0.20	44.77	0.47	24.20± 0.20	52.08	0.50	22.70± 0.50

Table S3. Quantitative XRD analysis of nanocrystalline silver exposed to light.

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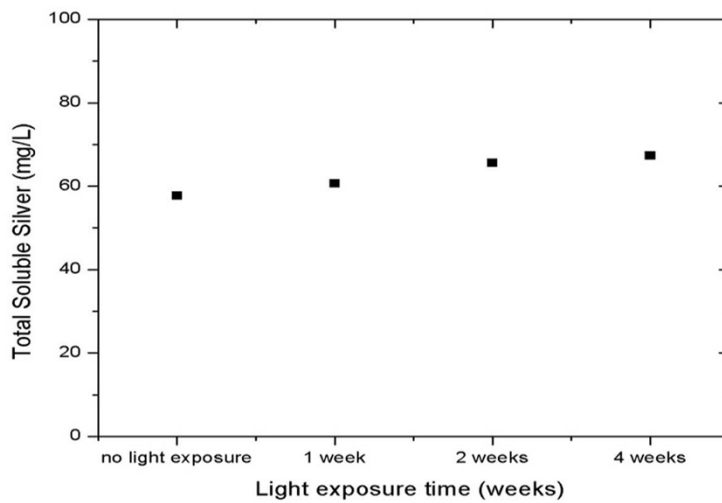


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2 Figure S1. Variation of total silver content for nanocrystalline silver samples exposed to  
3 light.

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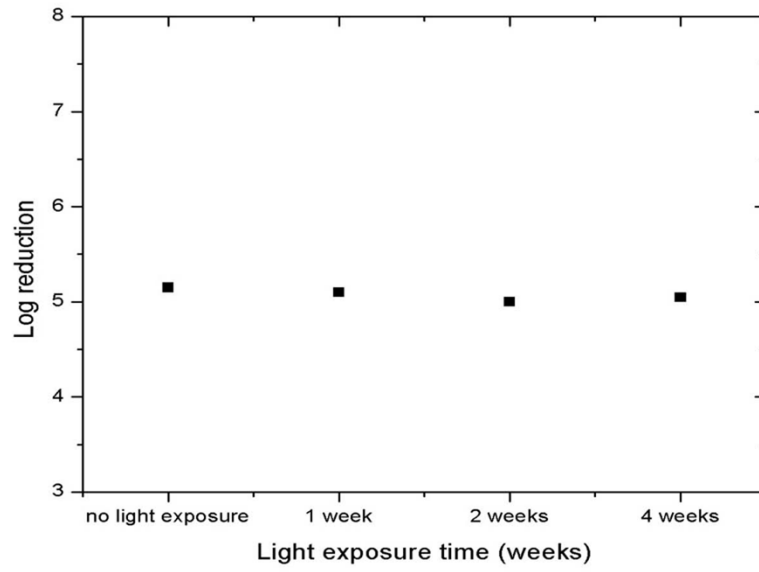
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7 Figure S2. Variation of soluble silver content for nanocrystalline silver samples exposed  
8 to light.

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5 Figure S3. Variation in bactericidal efficacy of nanocrystalline silver exposed to light and  
6 comparison to the reference sample.

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