Supplementary materials

BAG eluate dilutions	Elution time (h)	Summary	*p*-value
100%	2 vs 4	ns	>0.9999
	2 vs 8	ns	>0.9999
	2 vs 24	ns	>0.9999
	4 vs 8	ns	>0.9999
	4 vs 24	ns	>0.9999
	8 vs 24	ns	>0.9999
50%	2 vs 4	ns	>0.9999
	2 vs 8	ns	>0.9999
	2 vs 24	*	0.0276
	4 vs 8	ns	>0.9999
	4 vs 24	*	0.0277
	8 vs 24	*	0.0315
25%	2 vs 4	ns	>0.9999
	2 vs 8	ns	0.9882
	2 vs 24	***	0.0004
	4 vs 8	ns	0.9907
	4 vs 24	***	0.0005
	8 vs 24	**	0.0011
12.5%	2 vs 4	ns	0.4086
	2 vs 8	*	0.0297
	2 vs 24	****	<0.0001
	4 vs 8	ns	0.5309
	4 vs 24	***	0.0001
	8 vs 24	**	0.0054

Table S1: Pairwise statistical comparisons of bactericidal activity across all BAG eluate dilutions and elution time. Statistical significance is indicated as nonsignificant (ns) or significant (*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$, ****$p \leq .0001$), with exact *p* values shown for each comparison (2 vs 4, 2 vs 8, 2 vs 24, 4 vs 8, 4 vs 24, 8 vs 24) at 100%, 50%, 25%, and 12.5% dilutions.

Table S2 and **Table S3** are provided as two separate excel files

Average mass% of element	Condition			
	4h control	4h BAG	24h control	24h BAG
Carbon	34,74	48,98	40,89	56,49
Nitrogen	0,81	0,76	0,90	0,93
Oxygen	5,76	3,72	6,96	3,46
Vanadium	0,44	0,31	0,24	0,07
Iron	10,28	7,42	5,97	1,92
Cobalt	11,25	8,20	6,60	2,24
Copper	19,16	19,29	20,11	21,60
Osmium	7,51	6,84	8,14	7,93
Lead	7,42	1,59	7,41	2,47
Uranium	1,48	1,47	1,44	1,56
Silicon	0,06	0,27	0,04	0,31
Phosphorus	0,41	0,34	0,45	0,33
Chlorine	0,64	0,71	0,81	0,63
Sodium	0,01	0,01	0,01	0,01
Magnesium	0,01	0,01	0,01	0,00
Potassium	0,00	0,00	0,00	0,00
Calcium	0,02	0,06	0,03	0,05

Table S4: Average mass % of individual elements in samples of cells exposed for 4 or 24 h to RPMI (controls) or 2h-BAG-eluates. The mass % indicates the weight of a specific element relative to the total weight of all detected elements in the sample.

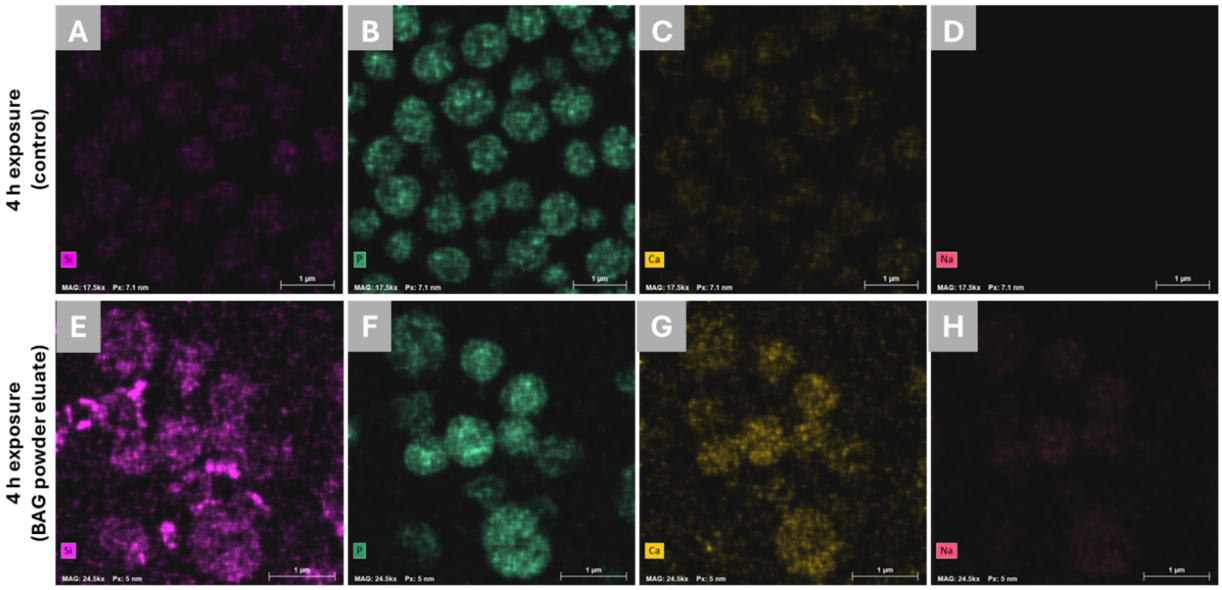


Figure S1: Elemental images of *S. aureus* after 4 h of exposure to RPMI medium as control (A - D) or 2h-BAG-eluate (E-F). A and E, Si; B and F, P; C and G, Ca; D and H, Na. Scale bar is 1 µm.

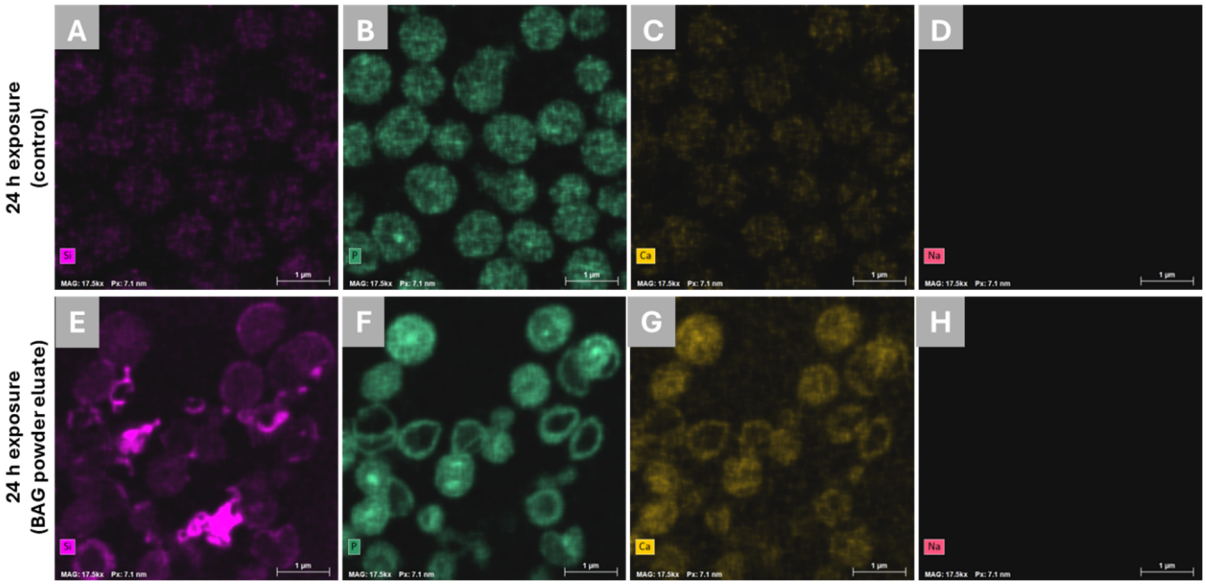


Figure S2: Elemental images of *S. aureus* after 24 h of exposure to RPMI medium as control (A - D) or 2h-BAG-eluate (E-F). A and E, Si; B and F, P; C and G, Ca; D and H, Na. Scale bar is 1 µm.