Supplementary material

Herbal polyphenols as selenium reducers in the green synthesis of selenium nanoparticles. Antibacterial and antioxidant capabilities of the obtained SeNPs

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Table 1S Size and polydispersity index (PDI) of obtained SeNPs.

	Average size [nm]	PDI
Blackberry		
SeNPs11	96.8	0.150
SeNPs11H	157	0.187
SeNPs12	169	0.211
SeNPs12H	171	0.268
SeNPs13	175	0.309
SeNPs13H	182	0.341
Hop		
SeNPs11	84.9	0.109
SeNPs11H	120	0.115
SeNPs12	143	0.154
SeNPs12H	165	0.195
SeNPs13	170	0.322
SeNPs13H	175	0.271
Lemon balm		
SeNPs11	79.0	0.103
SeNPs11H	115	0.121
SeNPs12	85	0.111
SeNPs12H	158	0.210
SeNPs13	113	0.172
SeNPs13H	162	0.261
Raspberry		
SeNPs11	74.0	0.132
SeNPs11H	84.1	0.175
SeNPs12	109	0.184
SeNPs12H	167	0.190
SeNPs13	124	0.141
SeNPs13H	181	0.263
Sage		
SeNPs11	74.0	0.125
SeNPs11H	93.1	0.212
SeNPs12	164	0.190
SeNPs12H	173	0.231
SeNPs13	179	0.333
SeNPs13H	182	0.397

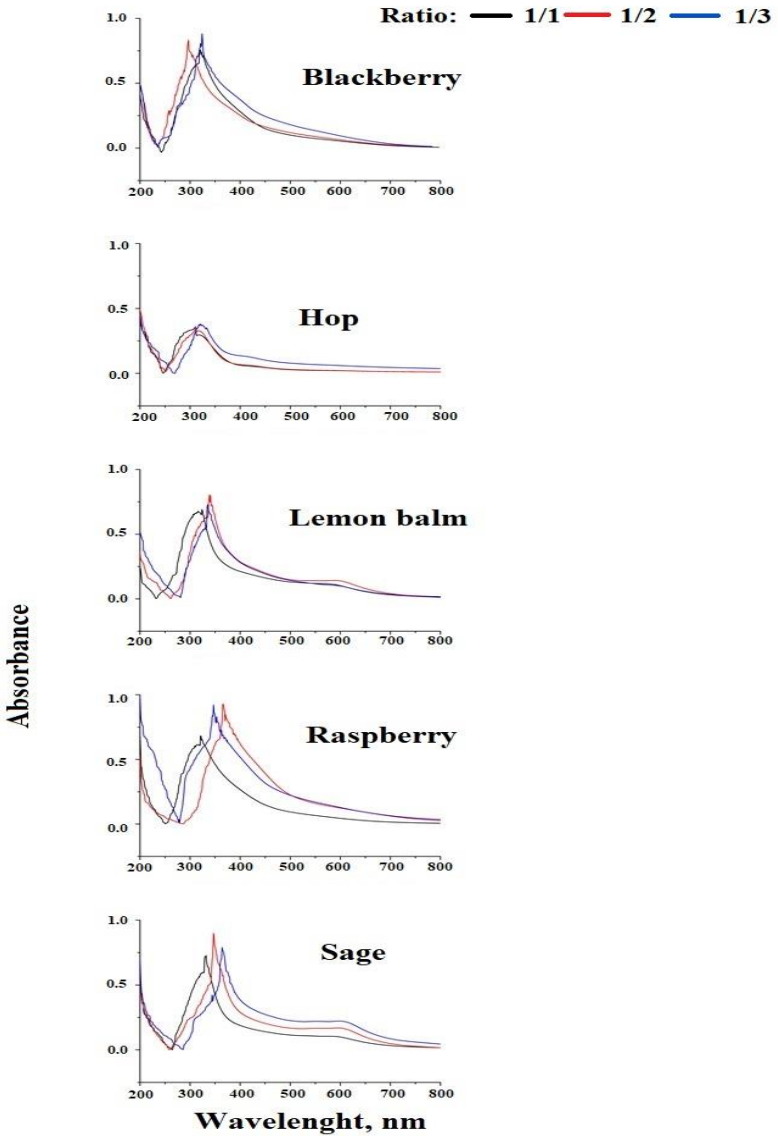


Fig 1S. UV-Vis spectra of synthesized SeNPs.

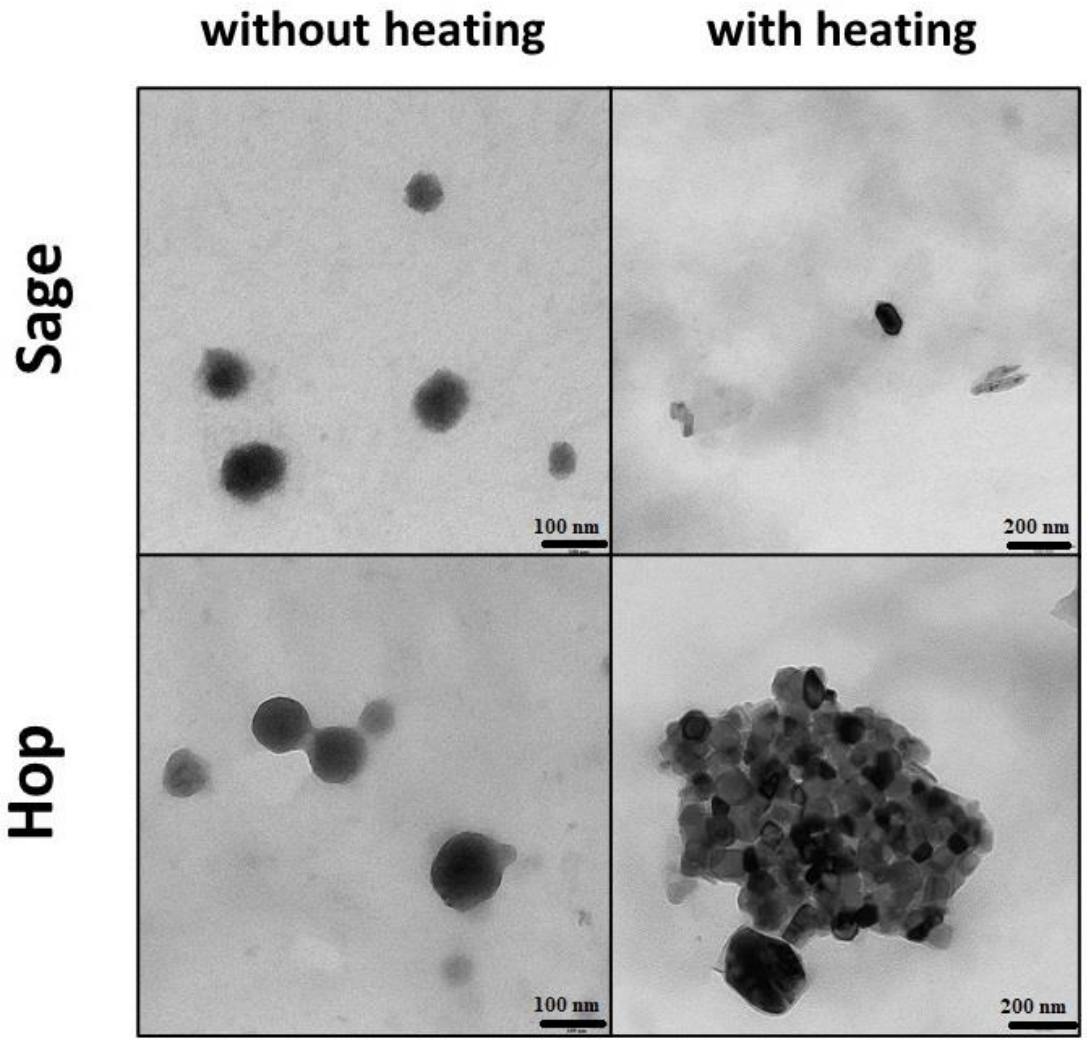
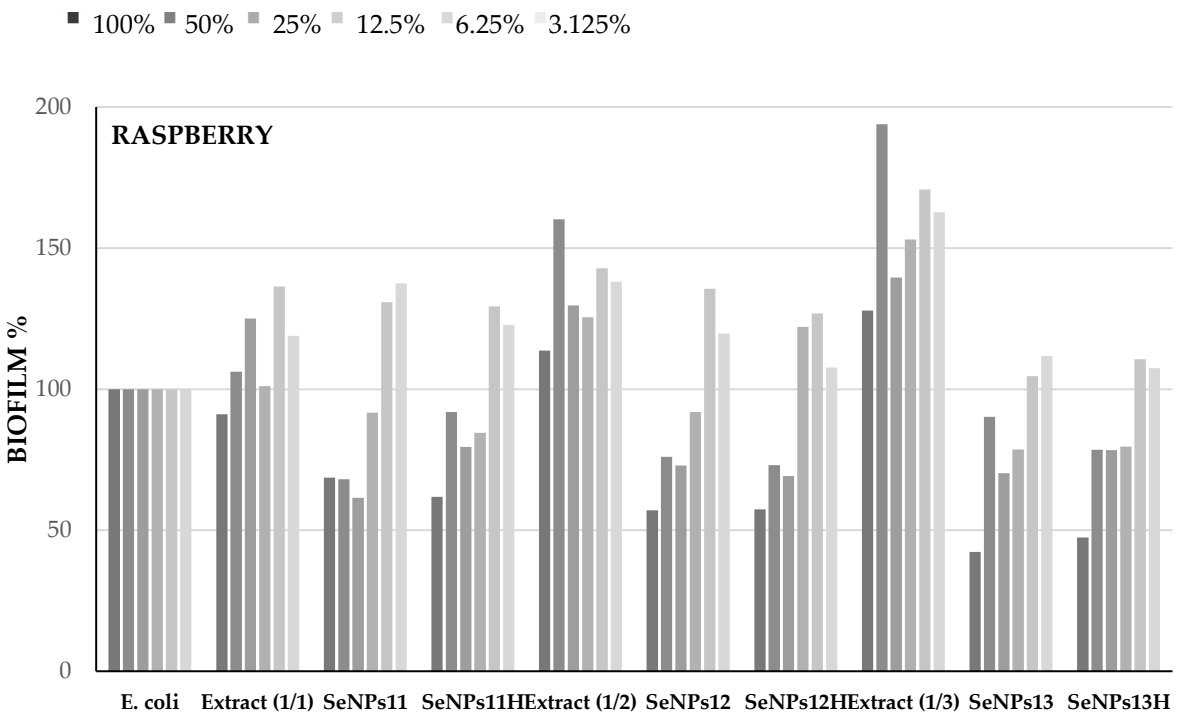
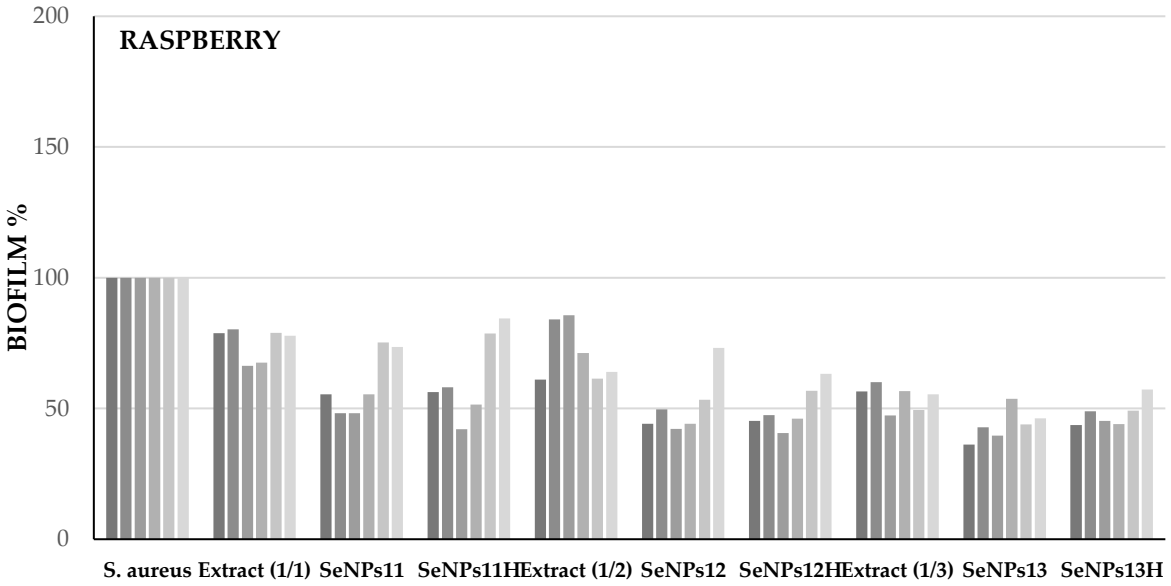
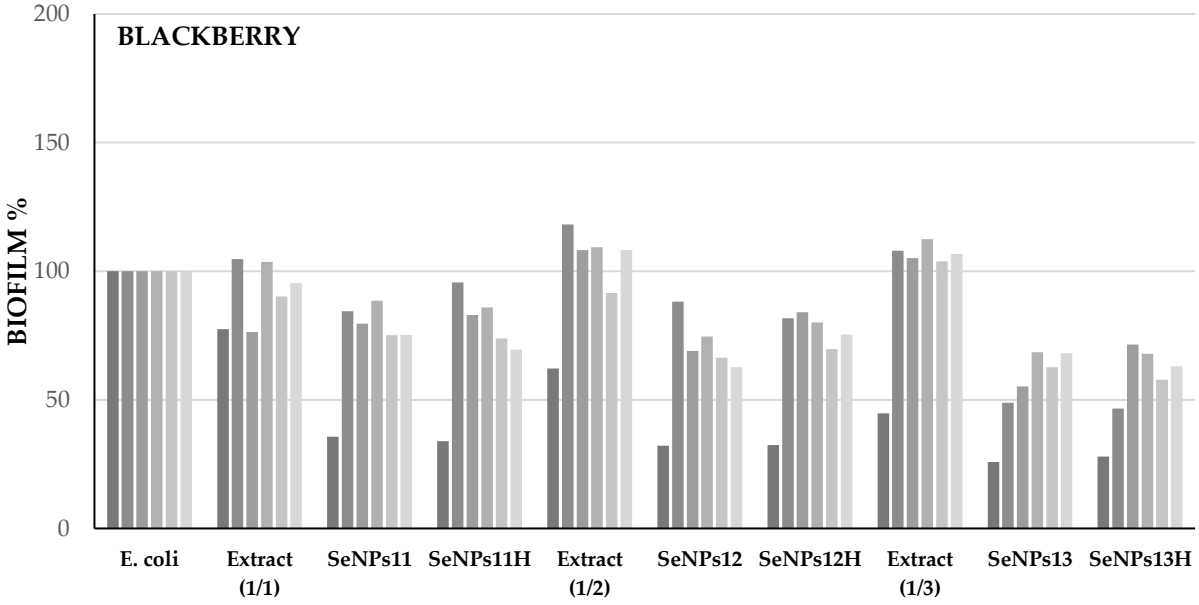
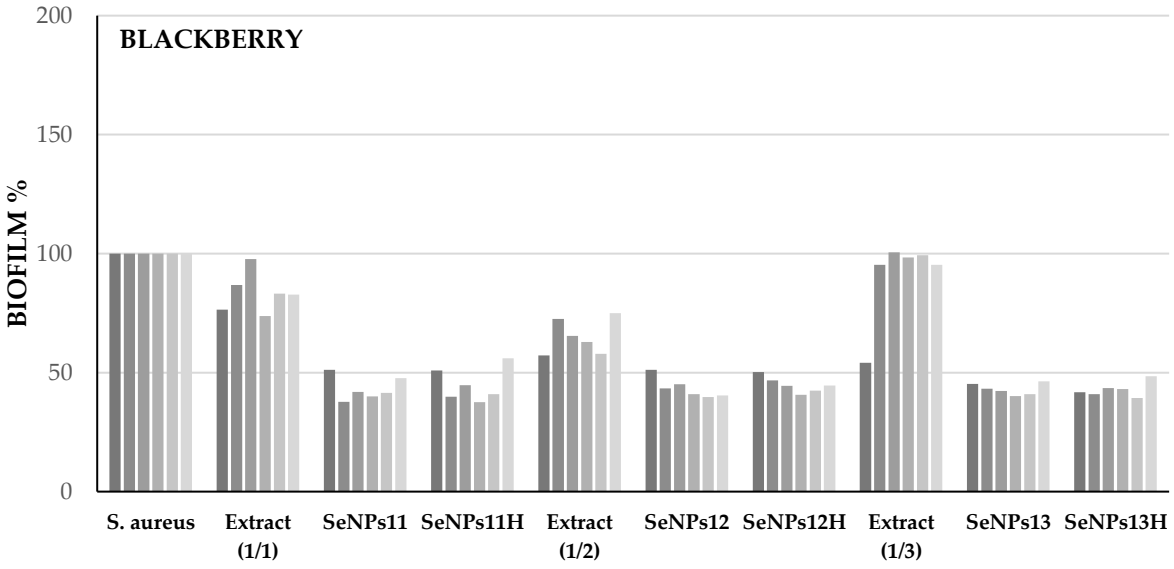


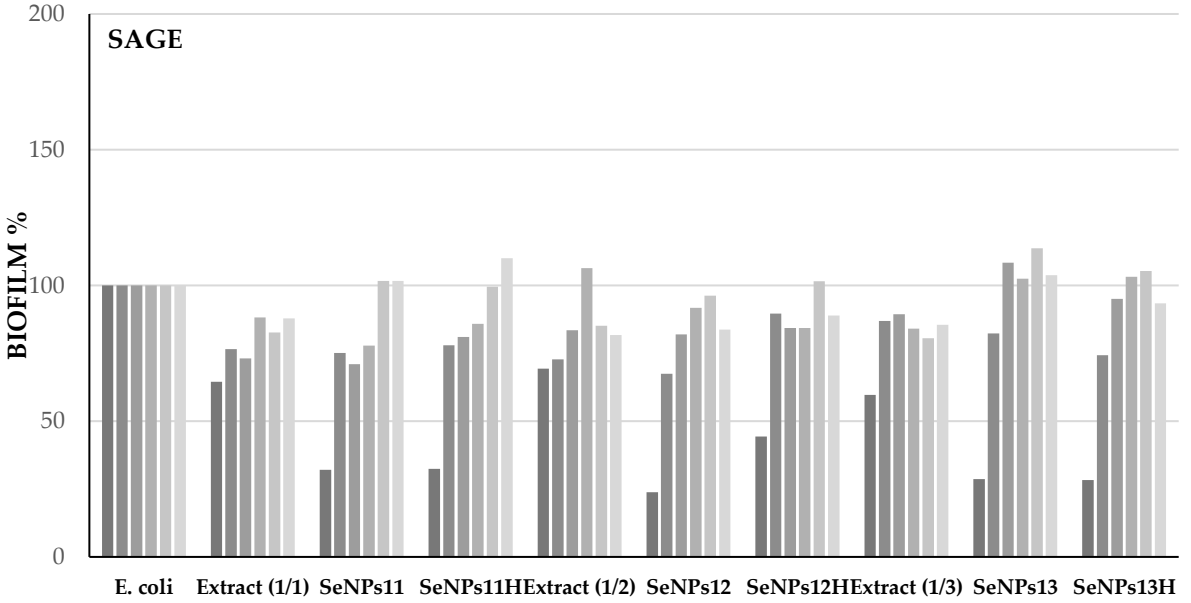
Fig 2S. The influence of post-reaction heating on shape and size of obtained SeNPs on the example of hop and sage.

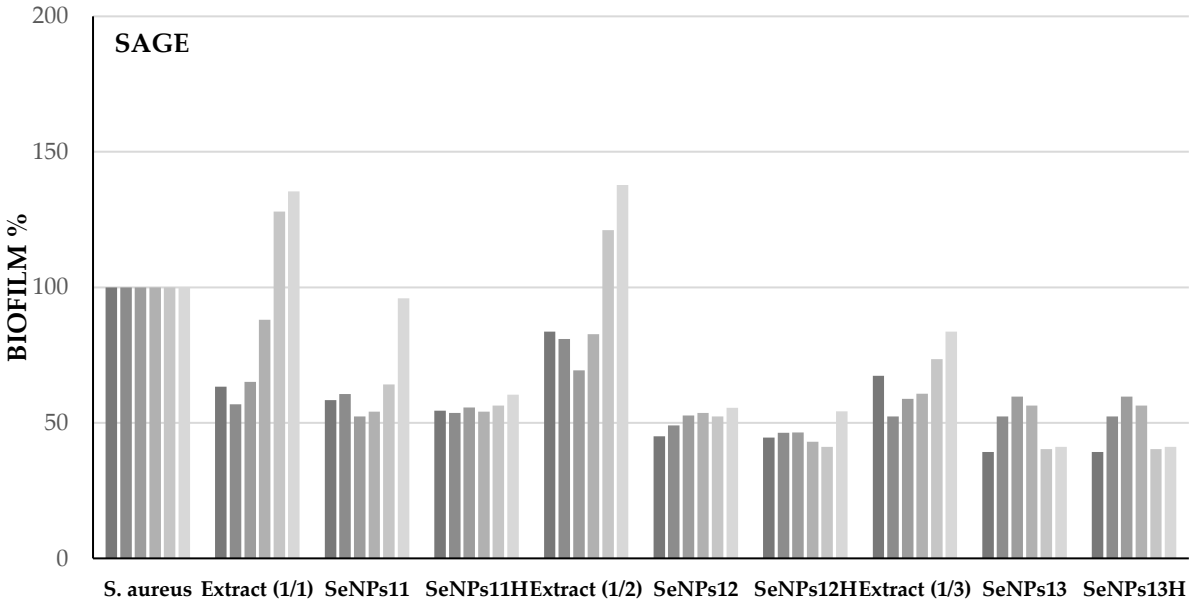

100% 50% 25% 12.5% 6.25% 3.125%
RASPBERRY
BIOFILM %
200
150
100
50
0
E. coli
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H

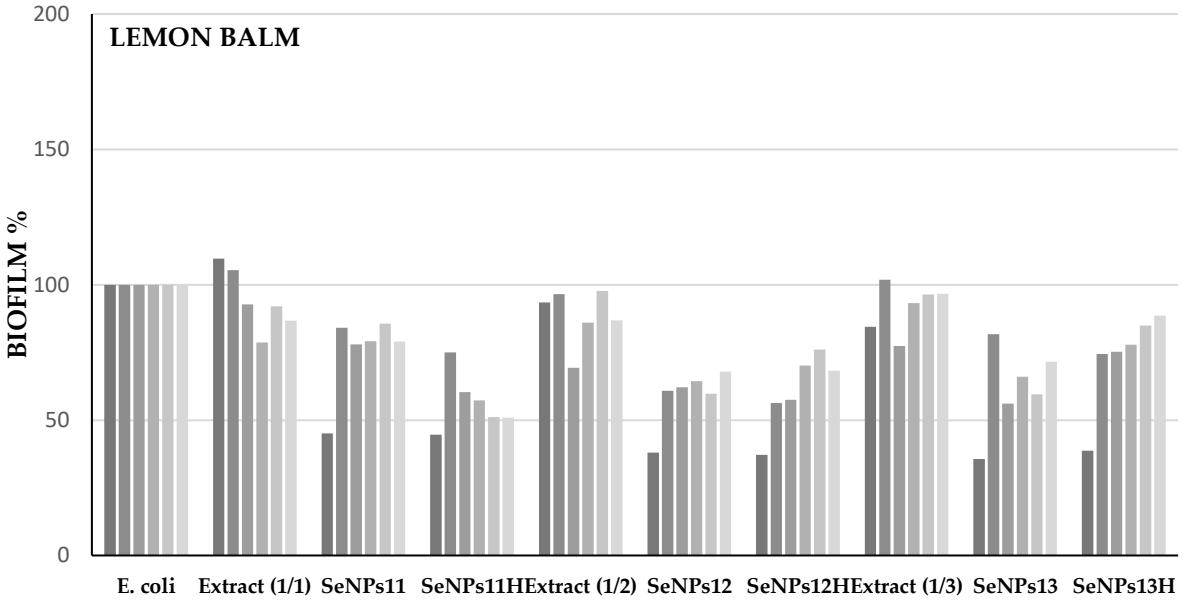

RASPBERRY
BIOFILM %
200
150
100
50
0
S. aureus
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H

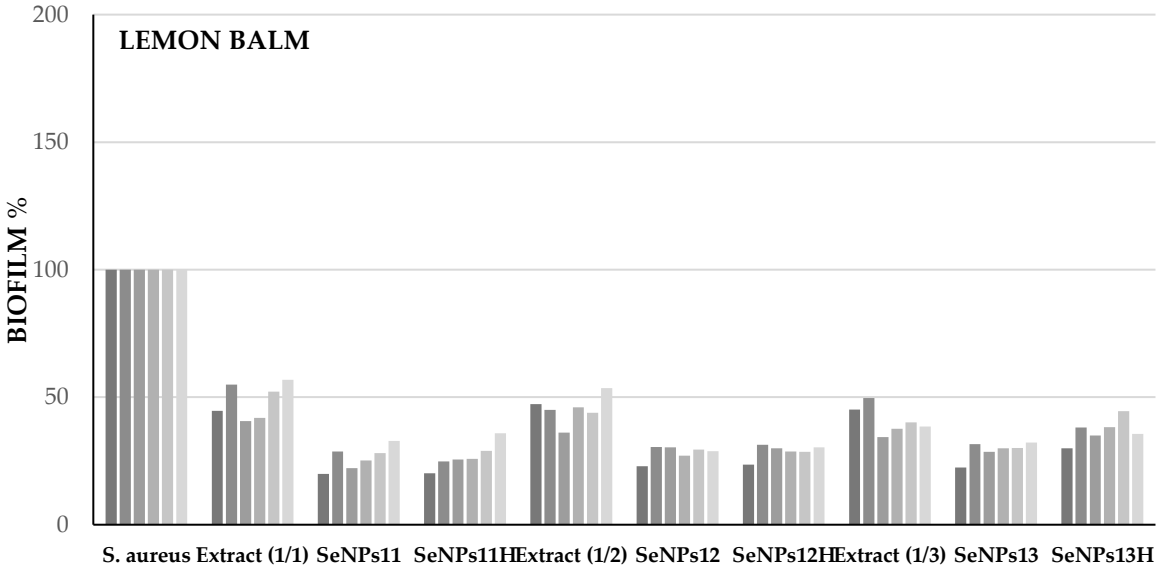

BLACKBERRY
BIOFILM %
200
150
100
50
0
E. coli
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H

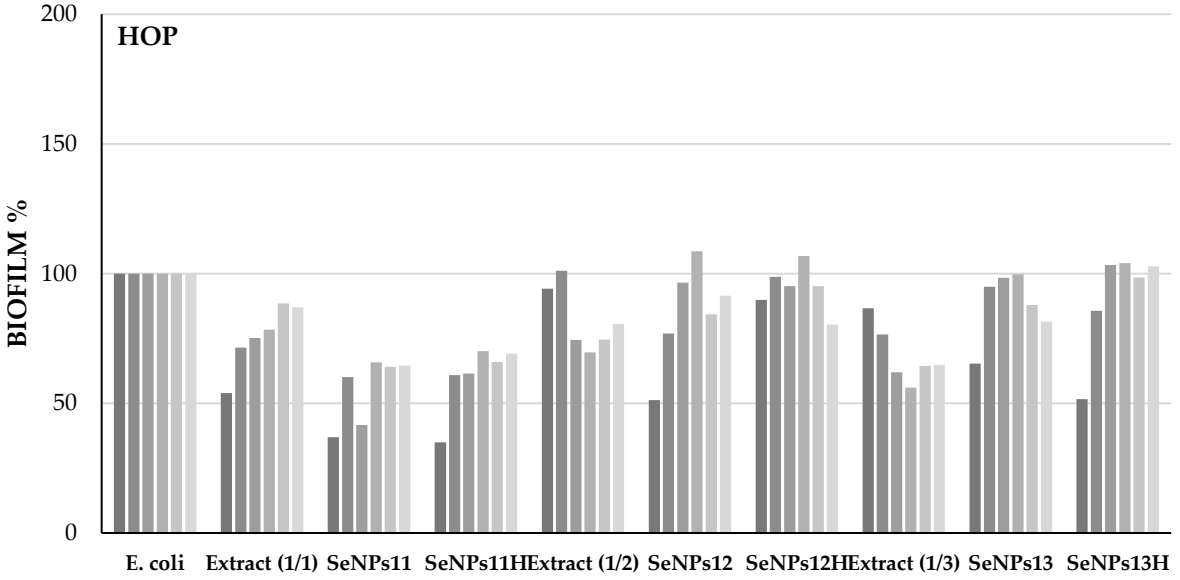

BLACKBERRY
BIOFILM %
200
150
100
50
0
S. aureus
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H

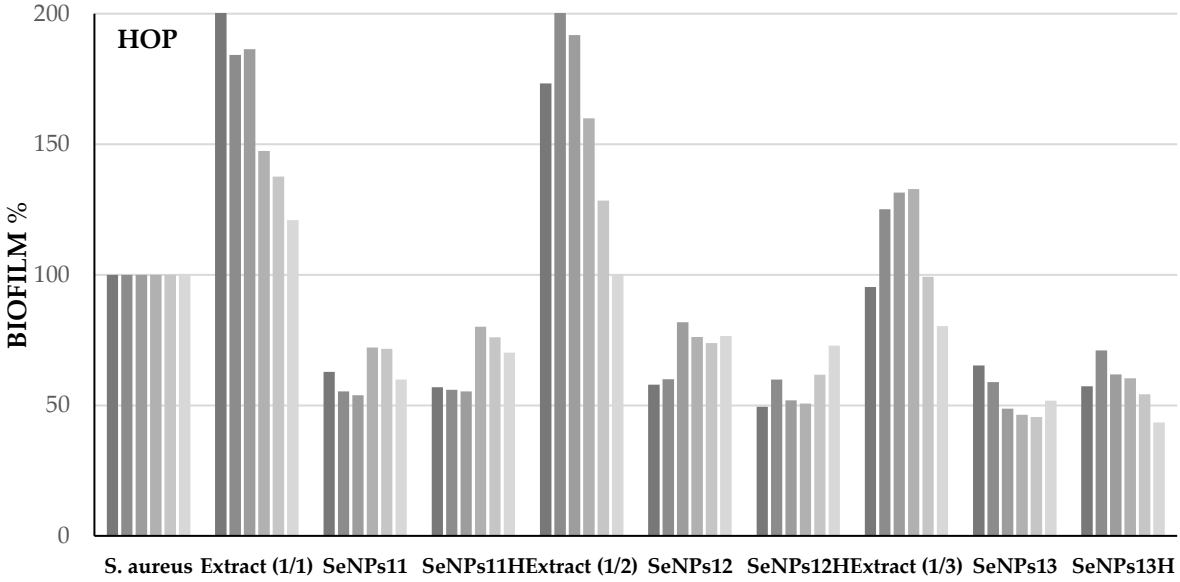

SAGE
BIOFILM %
200
150
100
50
0
E. coli
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H


SAGE
BIOFILM %
200
150
100
50
0
S. aureus
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H


LEMON BALM
BIOFILM %
200
150
100
50
0
E. coli
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H


LEMON BALM
BIOFILM %
200
150
100
50
0
S. aureus
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H


HOP
BIOFILM %
200
150
100
50
0
E. coli
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H


HOP
BIOFILM %
200
150
100
50
0
S. aureus
Extract (1/1)
SeNPs11
SeNPs11H
Extract (1/2)
SeNPs12
SeNPs12H
Extract (1/3)
SeNPs13
SeNPs13H

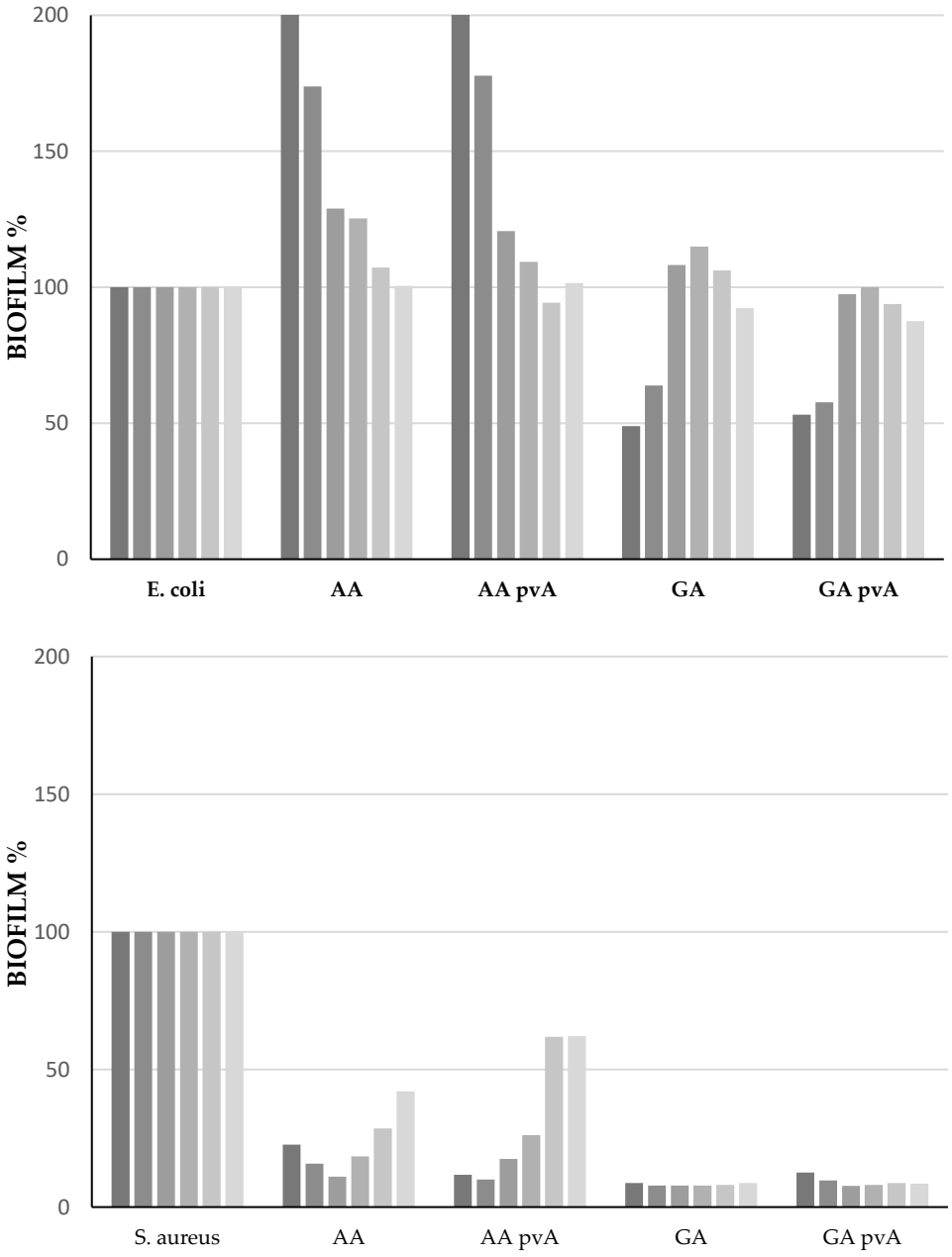


Fig 3S. The results of the biofilm analysis obtained with suspension of SeNPs against biofilms formed by *E. coli* and *S.aureus.*