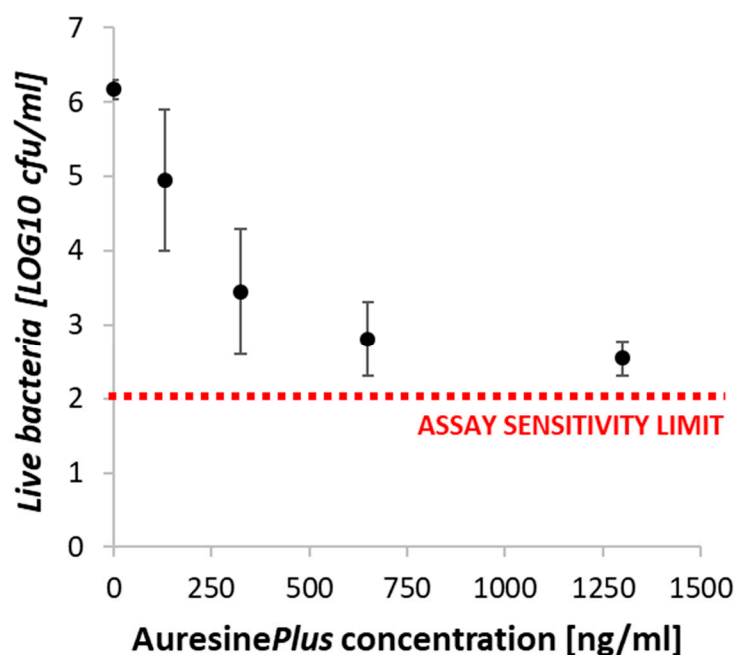
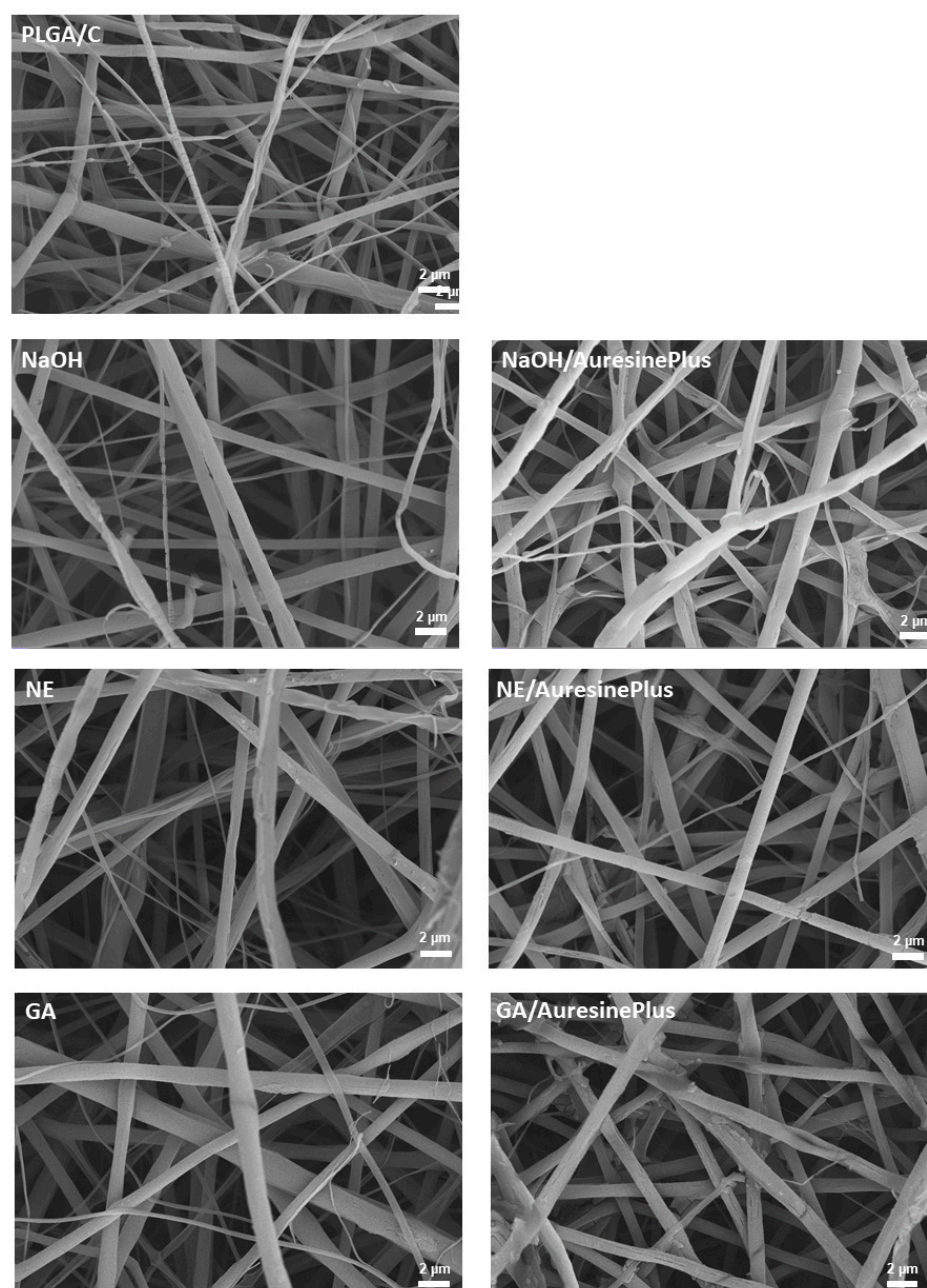


# Supplementary Materials: *Staphylococcus aureus* Specific Electrospun Wound Dressings: Influence of Immobilization Technique on Antibacterial Efficiency of Novel Enzybiotic

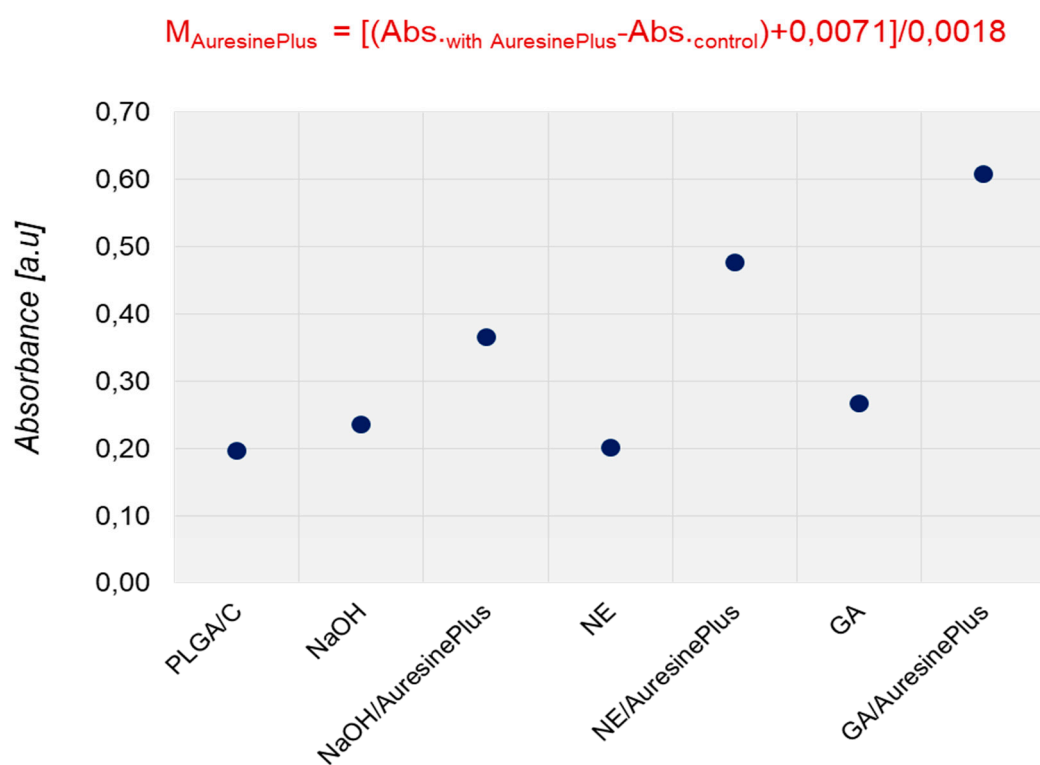
Olga Urbanek, Alicja Wysocka, Paweł Nakielski, Filippo Pierini, Elżbieta Jagielska and Izabela Sabała



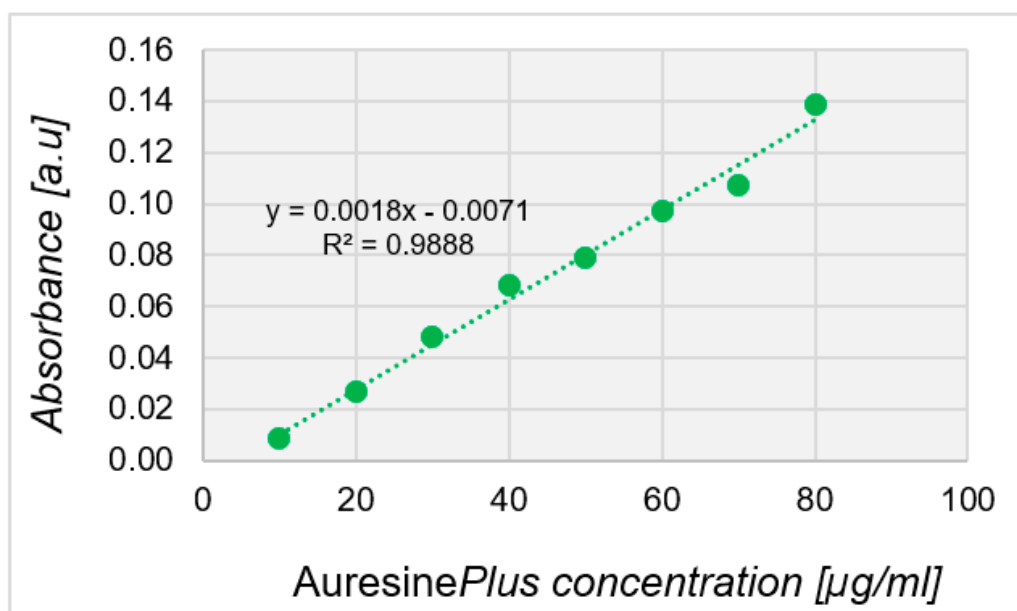
**Figure S1.** Calibration curve of the AuresinePlus antimicrobial activity. *S.aureus* NCTC 8325-4 bacterial cells ( $10^6$  CFU/mL) were subjected to the increasing amounts of the enzyme in the PBS buffer at room-temperature. The reaction was stopped after 3 h by adding the enzyme inhibitor, 1mM EDTA. Presented values show the number of live bacterial cells in log transformed CFU/mL. The bars represent standard deviation from two independent experiments.



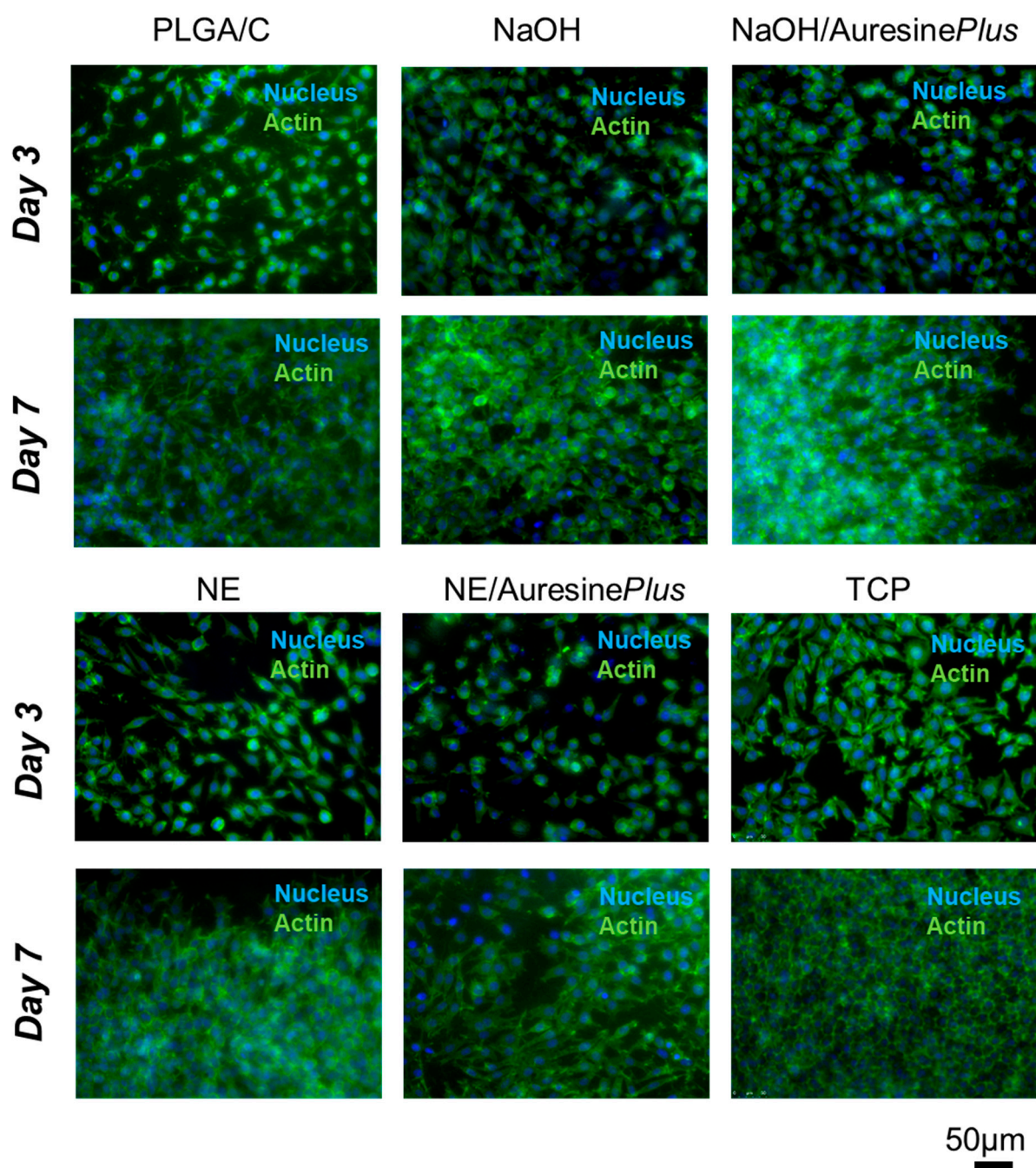
**Figure S2.** Field emission scanning electron microscope (FE-SEM) images illustrating homogeneity of bare fibers (PLGA/C), as well as fibers subjected to various methods for *AuresinePlus* immobilization.



### Calibration curve



**Figure S3.** Determination of AuresinePlus amount attached to 1 mg of nonvowens. Calculations were done based on BCA assays as described in Material and Methods.



**Figure S4.** Morphology of fibroblast grown on various fibers and control conditions (TCP).

**Table S1.** Antimicrobial activity of the functionalized materials – *S.aureus* NCTC 8325-4 eradication upon direct-contact of nonwovens with immobilized AuresinePlus and the respective controls. Around  $10^6$  CFU/ml of bacterial cells in PBS was incubated on the nonwoven surface for 3 hours. Presented values show the number of eradicated bacterial cells in cfu per ml and in relative (%) to the number of bacteria suspended in PBS alone and kept for 3 hours in the same conditions, Arrows indicate **decrease (eradication)** or **increase (growth)** of the bacterial cell number.

Sample Name	NaOH/ AuresinePlus	NaOH	NE/ AuresinePlus	NE	GA/ AuresinePlus	GA	In Solution	PLGA/C
Eradicated Bacteria Assay 1	$9.21 \times 10^5$ (99.05%) ↓	$-1.48 \times 10^6$ (-158.66%) ↑	$7.23 \times 10^5$ (77.69%) ↓	$4.18 \times 10^5$ (44.92%) ↓	$-5.83 \times 10^5$ (-62.74%) ↑	$-3.75 \times 10^5$ (-62.74%) ↑	$9.21 \times 10^5$ (99.04%) ↓	$-2.04 \times 10^6$ (-219.61%) ↑
Eradicated Bacteria, Assay 2	$9.23 \times 10^5$ (100.00%) ↓	$1.16 \times 10^5$ (12.58%) ↓	$9.21 \times 10^5$ (99.76%) ↓	$5.79 \times 10^4$ (6.27%) ↓	$-2.52 \times 10^5$ (-27.26%) ↑	$-5.06 \times 10^5$ (-27.26%) ↑	$9.23 \times 10^5$ (100%) ↓	$1.02 \times 10^5$ (11%) ↓
Average ± SD	$9.22 \times 10^5$ ± $1.52 \times 10^3$ (100 ± 1%)	$-6.80 \times 10^5$ ± $1.13 \times 10^6$ (-73 ± 121%)	$8.22 \times 10^5$ ± $1.40 \times 10^5$ (89 ± 16%)	$2.38 \times 10^5$ ± $2.54 \times 10^5$ (26 ± 27%)	$-4.18 \times 10^5$ ± $2.35 \times 10^5$ (-45 ± 25%)	$-6.55 \times 10^4$ ± $6.22 \times 10^5$ (-45 ± 25%)	$9.22 \times 10^5$ ± $1.60 \times 10^3$ (100 ± 1%)	$-9.70 \times 10^5$ ± $1.52 \times 10^6$ (-104 ± 163%)