

## Supplementary Information

### Human blood plasma factors affect the adhesion kinetics of *Staphylococcus aureus* to central venous catheters

Gubesh Gunaratnam<sup>1</sup>, Christian Spengler<sup>2</sup>, Simone Trautmann<sup>3</sup>, Philipp Jung<sup>1</sup>, Johannes Mischo<sup>2</sup>, Ben Wieland<sup>1</sup>, Carlos Metz<sup>4</sup>, Sören Becker<sup>1</sup>, Matthias Hannig<sup>3</sup>, Karin Jacobs<sup>2,5</sup>, and Markus Bischoff<sup>1\*</sup>

<sup>1</sup>Institute of Medical Microbiology and Hygiene, Saarland University, Homburg, Germany

<sup>2</sup>Experimental Physics, Saarland University, Saarbrücken, Germany

<sup>3</sup>Clinic of Operative Dentistry and Periodontology, Saarland University, Homburg, Germany.

<sup>4</sup>Department of Internal Medicine V, Pneumology and Intensive Care Medicine, Saarland University, Homburg, Germany

<sup>5</sup>Max Planck School Matter to Life, Heidelberg, Germany

#### \*Correspondence:

Dr. Markus Bischoff

[markus.bischoff@uks.eu](mailto:markus.bischoff@uks.eu)

**Table S1: Adhesion forces between *S. aureus* and the naïve tubing of catheter types I-III**

	N315		HOM 433	
Cell No.	F <sub>adh</sub> (nN)	L <sub>rupt</sub> (nm)	F <sub>adh</sub> (nN)	L <sub>rupt</sub> (nm)
	<b>Catheter type I</b>			
<b>1</b>	1.1 ± 0.3	229 ± 57	3.1 ± 1.2	148 ± 37
<b>2</b>	6.8 ± 3.5	212 ± 170	2.7 ± 1.8	212 ± 36
<b>3</b>	3.9 ± 1.7	150 ± 46	5.3 ± 1.2	152 ± 27
<b>4</b>	3.1 ± 1.4	88 ± 23	3.8 ± 1.2	147 ± 24
<b>5</b>	4.9 ± 3.1	176 ± 79	4.8 ± 1.8	229 ± 56
<b>M±SD</b>	<b>4.0 ± 2.9</b>	<b>171 ± 101</b>	<b>3.6 ± 1.6</b>	<b>180 ± 53</b>
<b>Catheter type II</b>				
<b>1</b>	1.9 ± 1.2	77 ± 38	3.6 ± 1.9	101 ± 27
<b>2</b>	2.3 ± 1.6	106 ± 39	4.6 ± 2.1	185 ± 66
<b>3</b>	5.7 ± 3.3	189 ± 62	3.8 ± 3.5	330 ± 191
<b>4</b>	3.2 ± 1.1	116 ± 49	2.4 ± 0.5	210 ± 100
<b>5</b>	2.5 ± 1.6	141 ± 40	2.8 ± 1.1	229 ± 81
<b>M±SD</b>	<b>3.1 ± 2.3</b>	<b>125 ± 59*</b>	<b>3.5 ± 2.2</b>	<b>211 ± 127</b>
<b>Catheter type III</b>				
<b>1</b>	3.9 ± 1.1	157 ± 50	5.8 ± 1.8	229 ± 68
<b>2</b>	2.6 ± 0.6	176 ± 42	3.1 ± 1.7	225 ± 76
<b>3</b>	2.3 ± 0.7	215 ± 11	2.8 ± 1.0	180 ± 95
<b>4</b>	4.0 ± 1.5	425 ± 159	3.9 ± 1.2	1021 ± 156
<b>5</b>	4.6 ± 1.4	176 ± 73	1.6 ± 0.5	221 ± 46
<b>M±SD</b>	<b>3.5 ± 1.4</b>	<b>231 ± 129</b>	<b>3.5 ± 1.9</b>	<b>226 ± 79</b>

Maximum adhesion force (F<sub>adh</sub>) and rupture length (L<sub>rupt</sub>) measured between single *S. aureus* N315 or HOM 433 bacteria and the naïve tubing surface of catheter types I to III (10 measurements per cell and catheter type recorded on a 10 µm line on the top of the tubing). \*, *P*<0.05 between CVC type II and CVC types I and III, respectively (Kruskal-Wallis test followed by Dunn's post hoc test)