



SUPPLEMENTARY MATERIAL

Surface Modification of Stainless Steel for Biomedical Applications: Revisiting a Century-Old Material

Aliya Bekmurzayeva^{a,b,c}, Wynter J. Duncanson^{d,e}, Helena S. Azevedo^c, Damira Kanayeva^f  

^a PhD in Science, Engineering and Technology Program, Nazarbayev University, Astana, 010000, Kazakhstan


^b National Laboratory Astana, Nazarbayev University, Astana, 010000, Kazakhstan

^c School of Engineering and Materials Science, Queen Mary University of London, London, E1 4NS, UK

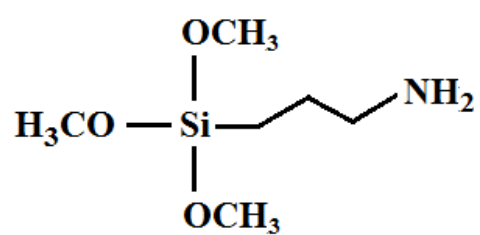
^d School of Engineering, Nazarbayev University, Astana, 010000, Kazakhstan

^e College of Engineering, Boston University, Boston, MA, 02215, USA

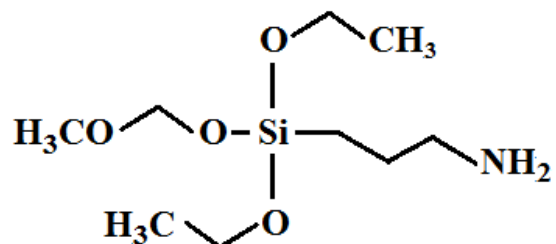
^f School of Science and Technology, Nazarbayev University, Astana, 010000, Kazakhstan

 Corresponding author: Damira Kanayeva, Department of Biology, School of Science and Technology, Nazarbayev University, Astana, 010000

 dkanayeva@nu.edu.kz



A



B

Fig. S1. Ethoxy- and methoxy-groups of silane-coupling agents as shown by the examples of 3-aminopropyl)triethoxysilane (A) and 3-aminopropyl)trimethoxysilane (B), respectively.

Table S1

Various surface pre-treatment methods using acids for SS.

Solution	Composition/ conditions	Incubation time, min	After acid treatment	Reference
Piranha solution H ₂ SO ₄ and H ₂ O ₂	(7:3) (v/v)	2	Direct formation of stable tris-catecholates	[30]
	(3:1) (v/v)	5	Plasma polymerization of different polymers	[31]
	(3:1) (v/v)	20	PEG derivative with silane group attached for improved blood compatibility	[10]
	(3:1) (v/v)	30	Dopamine coating then chitosan and lysozyme for antibacterial purposes	[11]
	(3:1) (v/v)	30	Dopamine and hexamethyldiamine then heparing for blood compatibility	[32]
Sulfochromic acid K ₂ Cr ₂ O ₇ in H ₂ SO ₄ at 60°C	0.5 g K ₂ Cr ₂ O ₇ , 20 ml H ₂ SO ₄ , 10 ml ultra-pure water	15	SAM from octadecyltrichlorosilane	[33]
	6 g of K ₂ Cr ₂ O ₇ per 100 ml of H ₂ SO ₄	20	Chitosan and then antibacterial peptides	[34]
Nitric acid 32.5% HNO ₃	Ultrasonic agitation	10	Silane coupling agents and then collagen immobilization for blood compatibility	[35]

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