

SUPPORTING INFORMATION

Control of Protein Affinity of Bioactive Nanocellulose and Passivation using Engineered Block and Random Copolymers

Maija Vuoriluoto¹, Hannes Orelma^{1,2}, Baolei Zhu³, Leena-Sisko Johansson¹, Orlando J. Rojas¹*

¹ Biobased Colloids and Materials group (BiCMat), Department of Forest Products Technology, School of Chemical Technology, Aalto University, FI-00076, Espoo, Finland

² Present address: VTT, Technical Research Centre of Finland, Biologinkuja 7, P.O. Box 1000, FIN-02044 VTT, Finland

³ DWI – Leibniz-Institute for Interactive Materials Research, Forckenbeckstr. 50, D-52056 Aachen, Germany

Corresponding Author *Phone: +358 40 3543143, Email: hannes.orelma@vtt.fi

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1. Block and random copolymers

1.1. Sample codes, weight fractions, numbers of monomer unit, molecular weights Mn (Da) and polydispersity indices (PDI) for analyzed block copolymers

Sample code	Weight Fraction		Polymerization Degree		Mn_{calc} (Da)	Mn_{GPC} (Da)	PDI
	PDMAEMA	POEGMA	DMAEMA	OEGMA			
D ₃₃ - <i>b</i> -EGMA ₅₂	17	83	33	52	29900	19000	1.21
D ₃₃ - <i>b</i> -EGMA ₁₃₇	7	93	33	137	70300	58400	1.29
D ₅₈ - <i>b</i> -EGMA ₁₀	66	34	58	10	13860	17100	1.20
D ₅₈ - <i>b</i> -EGMA ₁₁₈	14	86	58	118	65156	49200	1.23
D ₇₄ - <i>b</i> -EGMA ₁₇	59	41	74	17	19690	17100	1.17
D ₇₄ - <i>b</i> -EGMA ₁₁₈	17	83	74	118	67668	51300	1.29

Figure S1. Sample codes, molecular weight fractions, number of monomer units, molecular weights Mn (Da) and polydispersity indices (PDI) for six PDMAEMA-POEGMA block copolymers

1.2. Sample codes, weight fractions, numbers of monomer unit, molecular weights Mn (Da) and polydispersity indices (PDI) for analyzed random copolymers

Sample code	Weight Fraction		Polymerization Degree		Mn(Da)	PDI
	PDMAEMA	POEGMA	DMAEMA	OEGMA		
D ₄₆ - <i>rnd</i> -EGMA ₁₃₉	10	90	46	139	73000	1.28
D ₁₅₉ - <i>rnd</i> -EGMA ₂₃	70	30	159	23	35800	1.29

Figure S2. Sample codes, molecular weight fractions, number of monomer units, molecular weights Mn (Da) and polydispersity indices (PDI) for two PDMAEMA-POEGMA random copolymers

2. X-ray Photoelectron Spectroscopy

2.1. XPS spectra for TOCNF with adsorbed human IgG and a reference

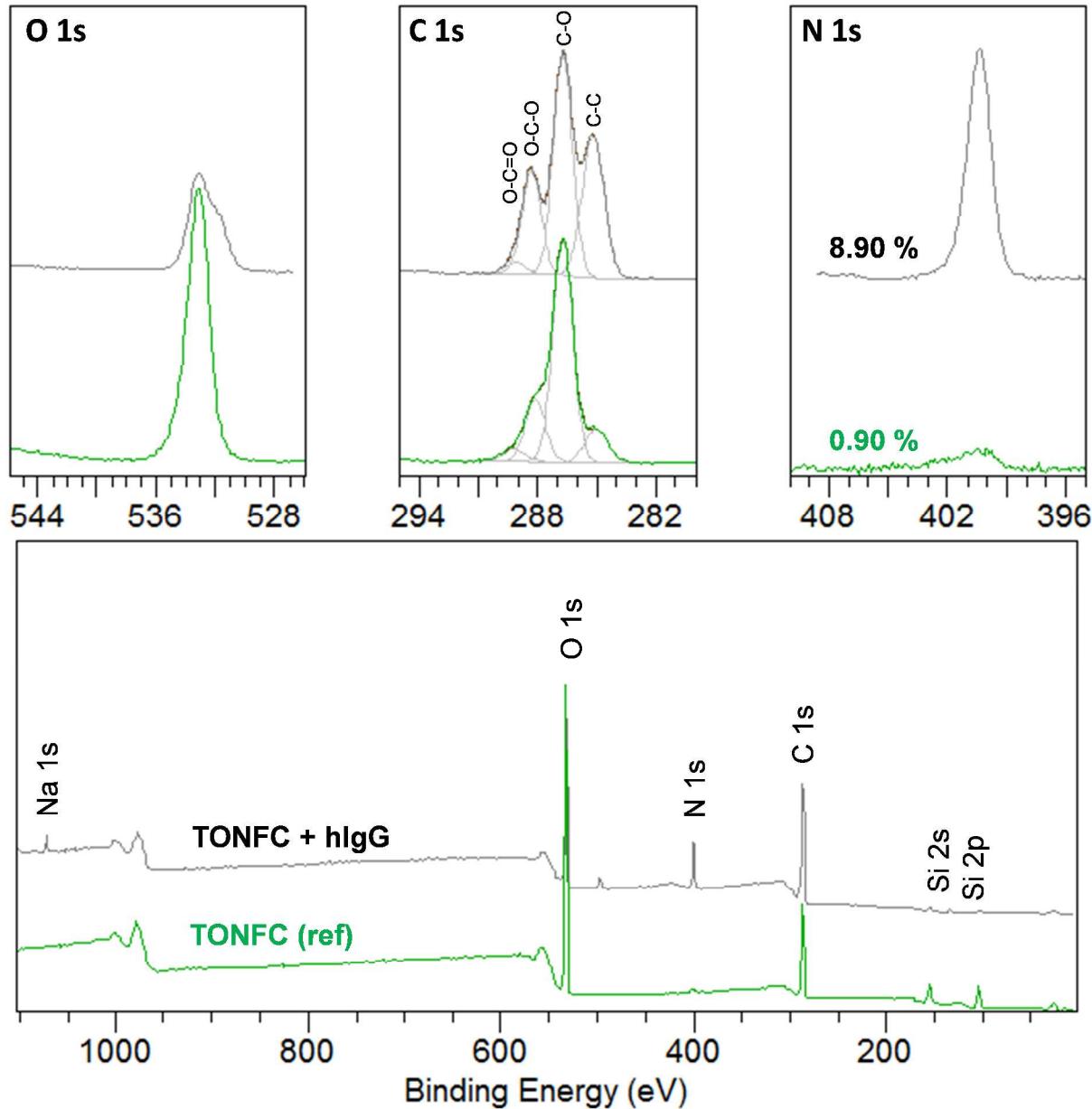


Figure S3. XPS wide (bottom panel) and detail spectra (top panels) for TOCNF film without and with adsorbed human IgG.

3. Surface Plasmon Resonance

3.1. SPR sensogram for hIgG adsorption on TOCNF and ability of SuperBlock, BSA and methoxypolyethylene glycol amine to suppress non-specific hIgG adsorption on TOCNF

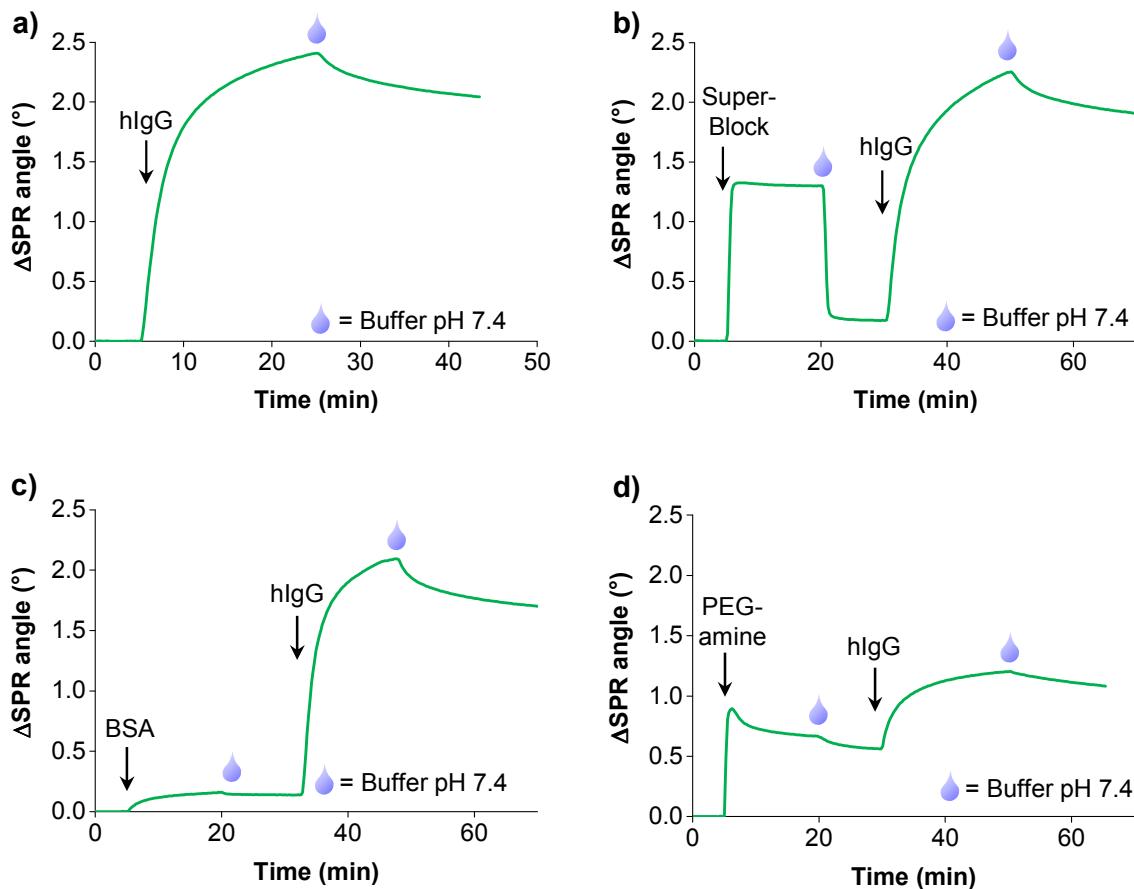


Figure S4. hIgG adsorption studied with SPR on unmodified TOCNF (a) and on TOCNF after modification with a blocking agent (to prevent non-specific hIgG adsorption). Three cases are presented: SuperBlock (b), bovine serum albumin (BSA) (c) and methoxypolyethylene glycol amine (PEG-amine) (d). Arrows (a-d) indicate the time at which the blocking agent or hIgG were applied in the SPR module. Droplet symbols indicate rinsing with phosphate buffer solution (PB).