Supporting Information

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Diblock and Random Antifouling Bioactive Polymer Brushes on Gold Surfaces by Visible-Light-Induced Polymerization (SI-PET-RAFT) in Water

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(a)

(b)

Figure S1. XPS survey-scan spectrum of poly(HPMA)-poly(CBMA) random (a) and diblock (b) copolymer brush.
Figure S2. XPS depth profiling. Narrow N1s XPS spectra (1) of a poly(HPMA)-poly(CBMA) polymer brush (50 nm initial thickness). Panel 1 shows the initial spectra, while the following 2-9 panels show the spectrum with 10 second interval between each step, panel 10 (100 s) 11 (120 s) 12 (180s).

Fouling from human serum (HS). Non-specific adsorption of undiluted HS was assessed in real-time by SPR. Table S1 presents the fouling after 15 min exposure to HS.

Table S1. Fouling from undiluted HS.

| Surface                                | Fouling from undiluted human serum fouling (pg⋅mm⁻²) |
|----------------------------------------|------------------------------------------------------|
| Au                                     | 4910 ± 189                                           |
| Poly(CBMA)                             | 14 ± 2                                               |
| Pol(HPMA)                              | 10 ± 3                                               |
| Poly(MeOEGMA)                          | 126 ± 31                                             |
| Poly(HPMA)-poly(CBMA)(10%) random      | 53 ± 35                                              |
| Poly(HPMA)-poly(CBMA) diblock          | 40 ± 18                                              |
Previously reported values of fouling from human serum and plasma on surfaces designed by different methods such as SI-ATRP are presented in Table S2.

**Table S2.** The protein fouling on different surfaces exposed to HS according to previously reported experiments.

| Surface                                      | Fouling from undiluted human serum/plasma fouling (pg⋅mm⁻²) |
|----------------------------------------------|-------------------------------------------------------------|
| Au (unmodified gold surface)                 | 3000 – 4000 [1, 2]                                         |
| Poly(carboxybetaine) and poly(sulfobetaine) brushes | 10 – 30 [3-5]                                              |
| Pol(HPMA)                                    | 3 – 10 [3, 5-7]                                           |
| Poly(MeOEGMA) and oligoethylene glycol-based polymer brushes | 10 – 150 [1-3]                                           |
| poly(HPMA)-poly(CBMA) (7.5%) random          | 0 ± 0.3 [8]                                                |
| poly(HPMA)-poly(CBMA) (15%) random           | 29 ± 8 [8]                                                 |

Note: during AntiBSA immobilizations measurements before injection of AntiBSA there was a temporary stop of the measurements of the sensor that created a jump in the sensogram just before the injection of AntiBSA that was corrected for during data processing (Figure S3).

**Figure S3.** Example of raw SPR sensogram on diblock poly(HPMA)-poly(CBMA) diblock, showing the spike in SPR response upon switching to the AntiBSA-containing medium.
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