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Dynamic Isolation and Unloading of Target Proteins by Aptamer-Modified Microtransporters

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SUPPORTING INFORMATION

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1. Supporting Videos description

Video S-1. TBA-modified microtransporters after 10 min of movement either in 20 nM thrombin or 1000 nM BSA, human IgG or lysozyme solutions. See Methods section for more details. Conditions, as in Fig. 2.

Video S-2. TBA-modified microtransporters after 10 min movement in solutions of different thrombin concentrations. Conditions, as in Fig. 3.

Video S-3. TBA-modified microtransporters after 10 min movement in 25 % serum and 10% pretreated human plasma solutions containing 100 nM thrombin. Conditions, as in Fig. 4.

Video S-4. MBA-modified microtransporters before and after ATP-assisted release of the captured thrombin. Conditions, as in Fig. 5.

2. Table S-1. Dependence of the speed over the sequential steps required in a common experiment.

Step	Average speed, µm/s	Average distance travelled in 10 minutes, mm
1. Before Thrombin addition	130 ± 23	78
2. Thrombin Capture	105 ± 4	63
3. Labeling with the B-DA	104 ± 20	62
4. Labeling with the fluorescence particles	132 ± 33	79

*Average data obtained for 10 microrockets in 3 independent experiments. Confidence intervals calculated for $\alpha = 0.05$.

3. Figure S-1

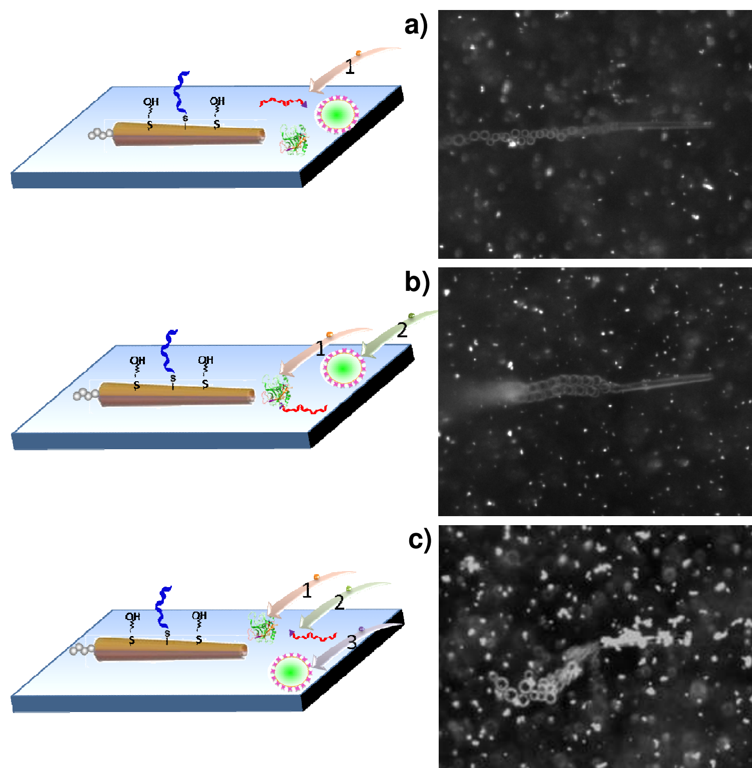

Figure S-1. Comparison of the isolation efficiency observed when mixing: a) thrombin, B-DA, and particles in one step, b) B-DA and thrombin in one step and adding later the particles, and c) thrombin, B-DA and particles in a sequential 3-step procedure. Number of steps is indicated as 1, 2 and 3.