Supporting Information

Selective functionalization with PNA of silicon nanowires on silicon oxide substrates

Janneke Veerbeek,[a] Raymond Steen,[b] Wouter Vijselaar,[a] W. Frederik Rurup,[b] Saša Korom,[c] Andrea Rozzi,[c] Roberto Corradini,[c] Loes Segerink,[b] Jurriaan Huskens*[a]

[a]Molecular NanoFabrication group, MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands

[b]BIOS Lab on a Chip group, MESA+ Institute for Nanotechnology, TechMed Centre and Max Planck Center for Complex Fluid Dynamics, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands

[c]Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parco Area delle Scienze 17/A, 43124 Parma, Italy

*E-mail: j.huskens@utwente.nl

Scheme S1. Reaction scheme of the click chemistry routes tested on silicon nanowires functionalized with a 1,8-nonadiyne monolayer.
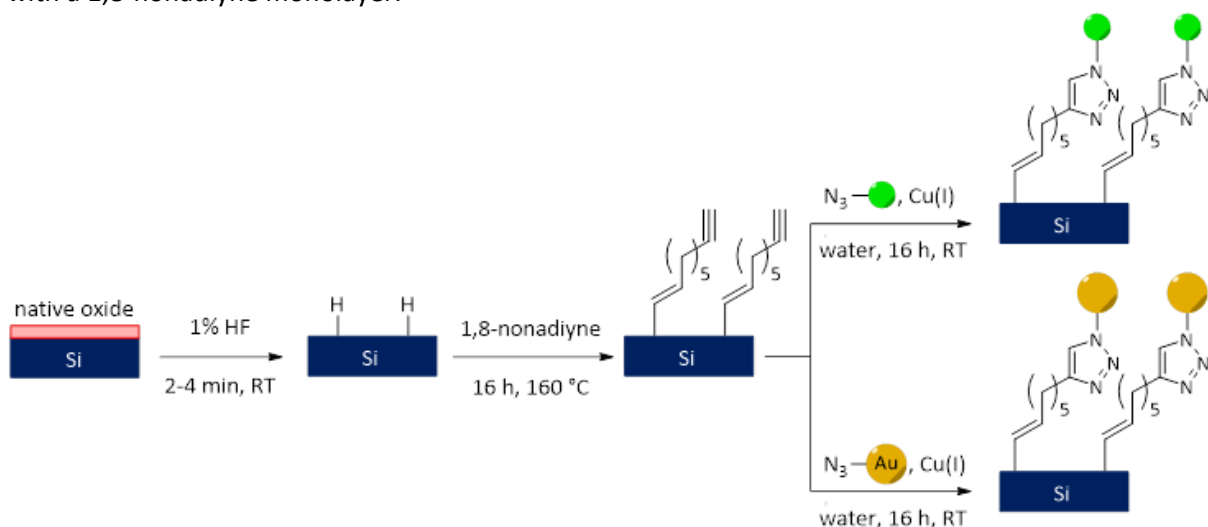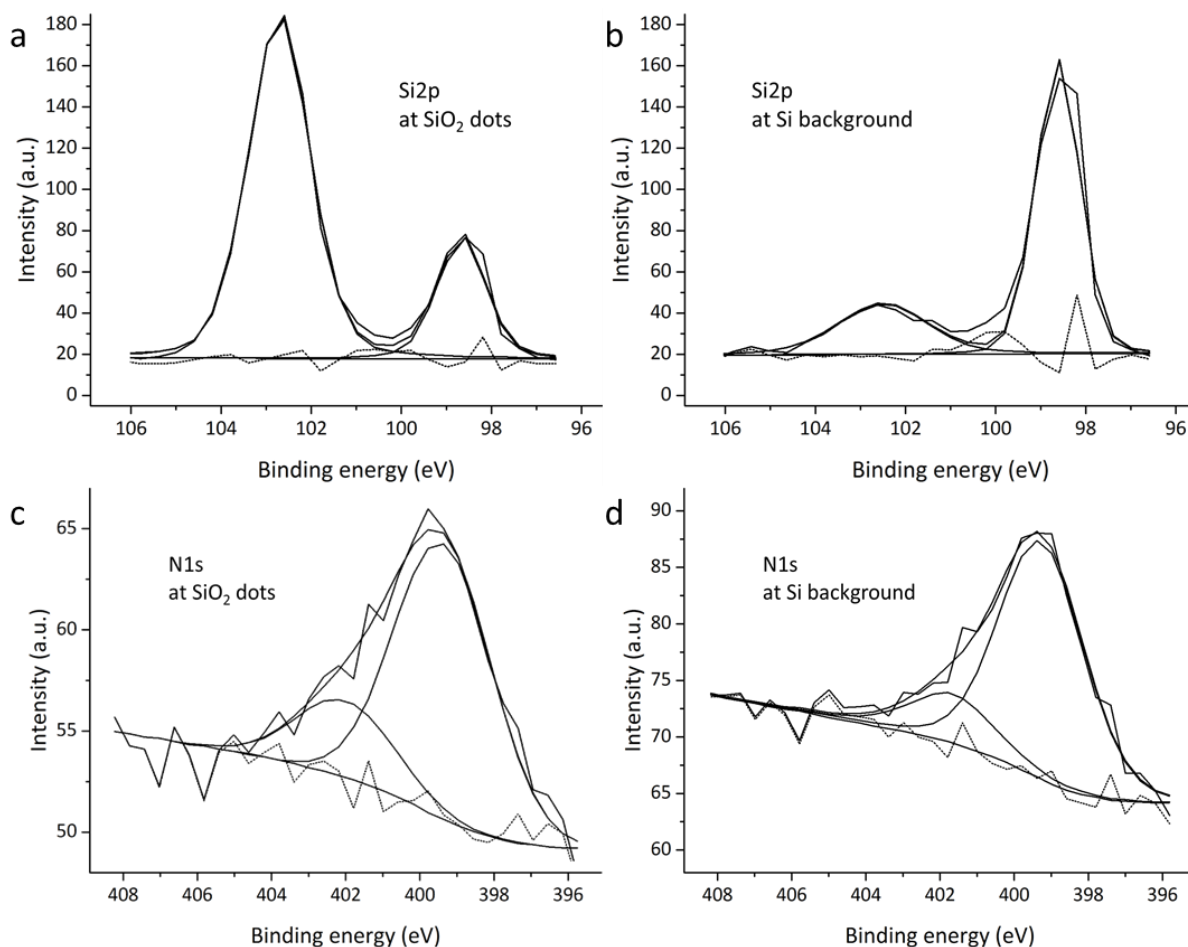
Figure S1. XPS spectra of the SiO₂/Si patterned substrates of Figure 1c, including a) the Si2p region at the SiO₂ dots, b) the Si2p region at the surrounding Si, c) the N1s region at the SiO₂ dots, and d) the N1s region at the surrounding Si.

Scheme S2. Reaction schemes of a) click chemistry with azido-PNA and b) thiol-yne chemistry with thiol-PNA onto a 1,8-nonadiyne monolayer, followed by hybridization with complementary DNA.
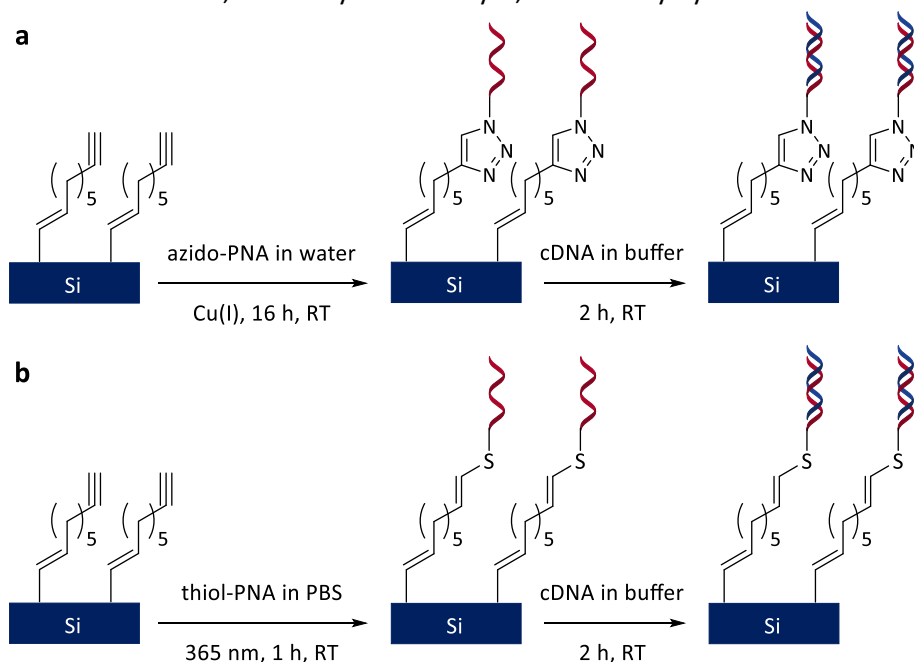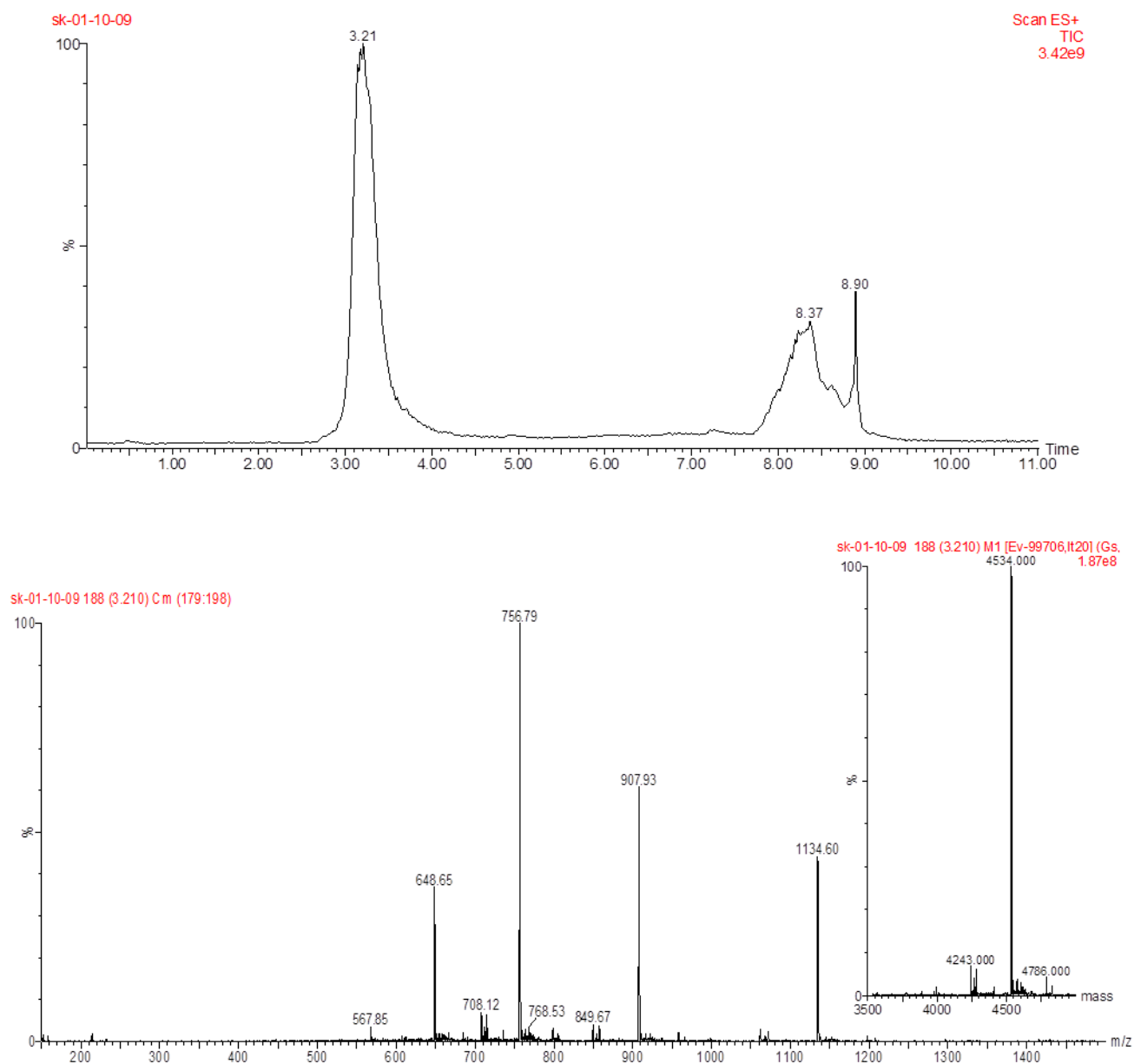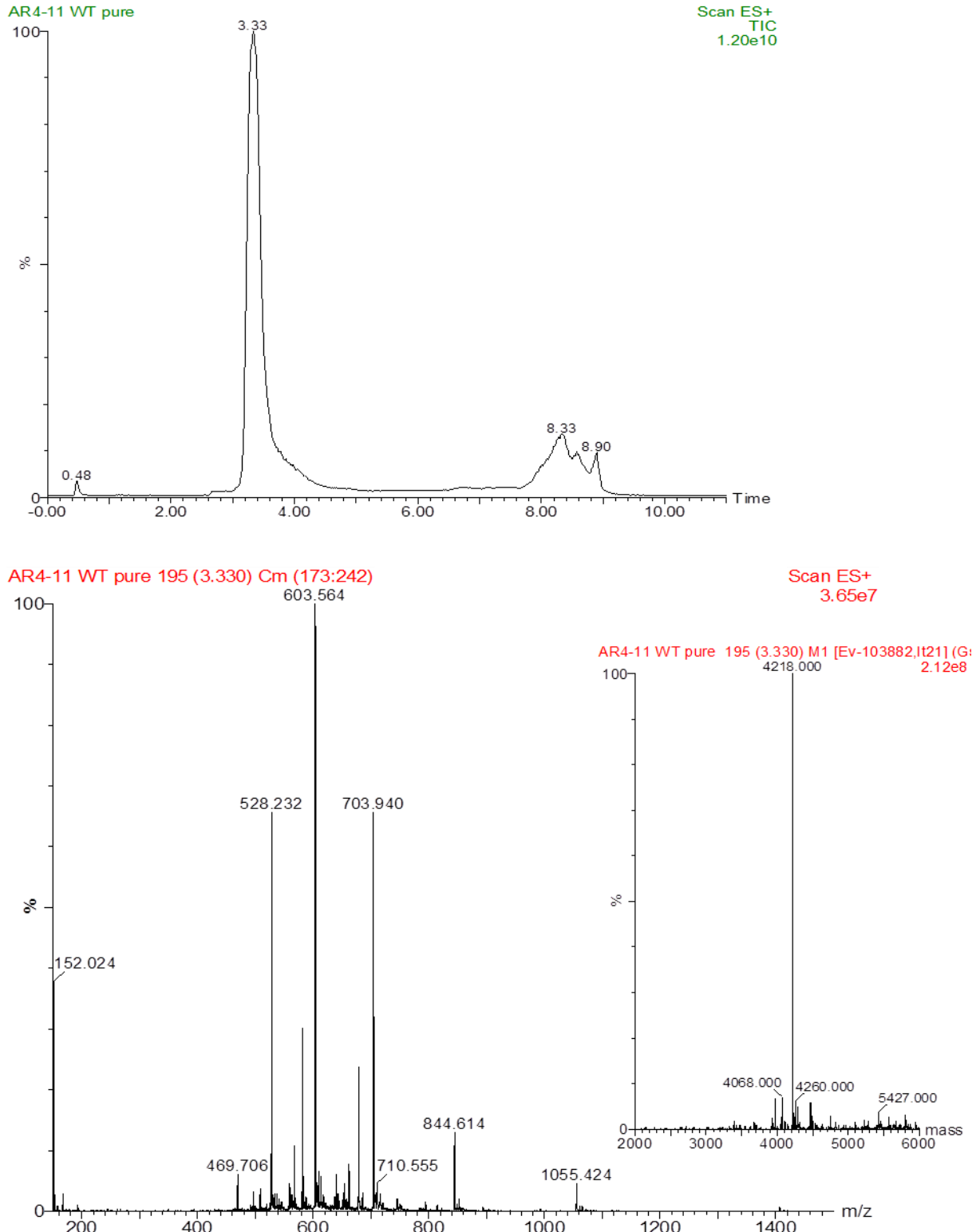
Figure S2. UPLC-MS analysis of azido-PNA$_1$. UPLC-MS trace (top), MS spectrum of the corresponding peak at 3.21 min (bottom); insert: deconvolution of the multicharged signals to give average MW.
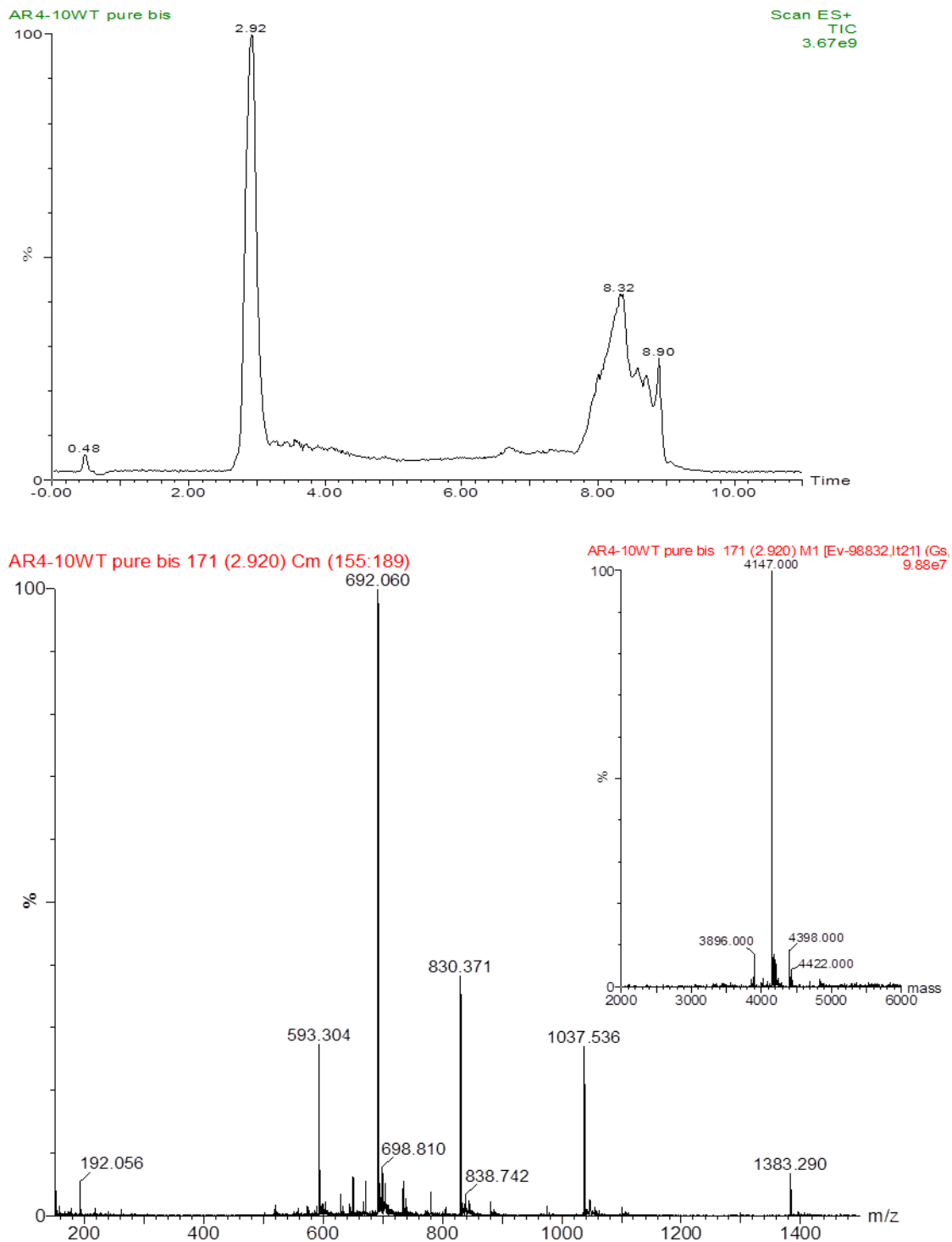
Figure S3. UPLC-MS analysis of azido-PNA$_2$. UPLC-MS trace (top), MS spectrum of the corresponding peak at 2.92 min (bottom); insert: deconvolution of the multicharged signals to give average MW.

Figure S4. UPLC-MS analysis of (protected) thiol-PNA. UPLC-MS trace (top), MS spectrum of the corresponding peak at 3.33 min (bottom); insert: deconvolution of the multicharged signals to give average MW.