## **Supporting Information**

## Automated ARGET ATRP accelerates catalyst optimization for the synthesis of thiol-functionalized polymers

Daniel J. Siegwart,<sup>1,2,#</sup> Matthias Leiendecker,<sup>1,2,#</sup> Robert Langer,<sup>1,2,3</sup> and Daniel G. Anderson<sup>1,2,3</sup>\*

<sup>1</sup> Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, 02139

<sup>2</sup> David H. Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, 02139

<sup>3</sup> Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA, 02139

# These authors contributed equally.

\* To whom correspondence should be addressed: dgander@mit.edu





Methyl methacrylate (MMA) Di(ethylene





Butyl acrylate (BA)



2-(Dimethylamino)ethyl methacrylate (DMAEMA)



2-(Diethylamino)ethyl methacrylate (DEAEMA)

Poly(ethylene glycol) methyl ether methacrylate (OEOMA) with average M<sub>n</sub> 300



Poly(ethylene glycol) methyl ether methacrylate (OEOMA) with average M<sub>n</sub> 475



Figure S1. Monomers polymerized by ARGET ATRP in this study.



**Figure S2.** GPC traces showing cleavage of the disulfide bond by DTT in THF at 50°C and reduction in MW. The black line shows control (THF, 50° C, without DTT).