

# Supporting Information

## **Sensitive Western-Blot Analysis of Azide-Tagged Protein Post Translational Modifications (PTMs) Using Thermo-responsive Polymer Self-assembly**

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GPC, XPS and TEM analysis of PNATH, C<sub>4</sub> reverse phase liquid chromatography characterization of HRP and triarylphosphine-HRP, Western-Blot (WB) analysis using standard O-GlcNAc protein ( $\alpha$ -crystallin), and PNATH based WB analysis of newly synthesized proteins and palmitoylation modified proteins from HeLa cells are included in the supporting information.

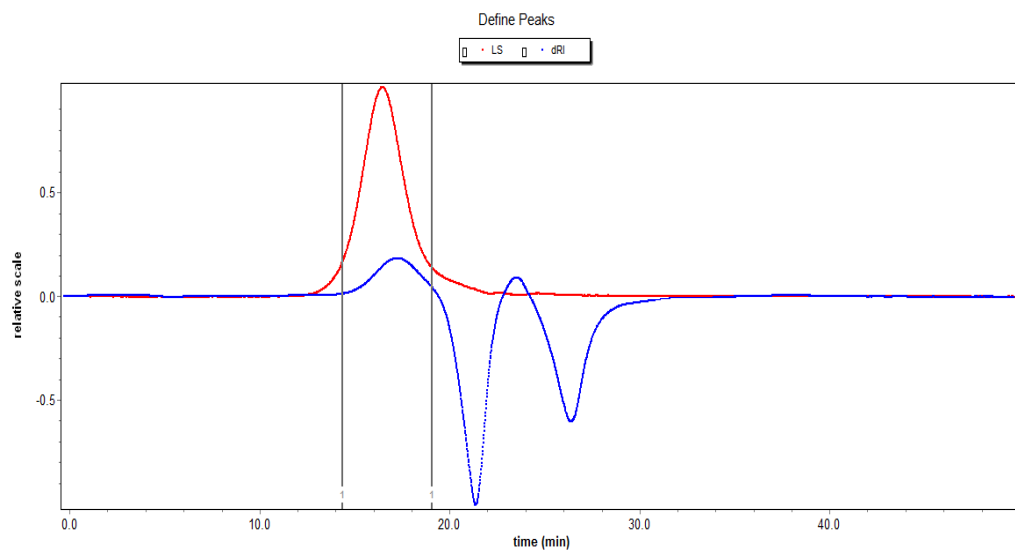


Figure S1. Gel permeation chromatography (GPC) analysis of the molecular weight (Mn) of PNATH.

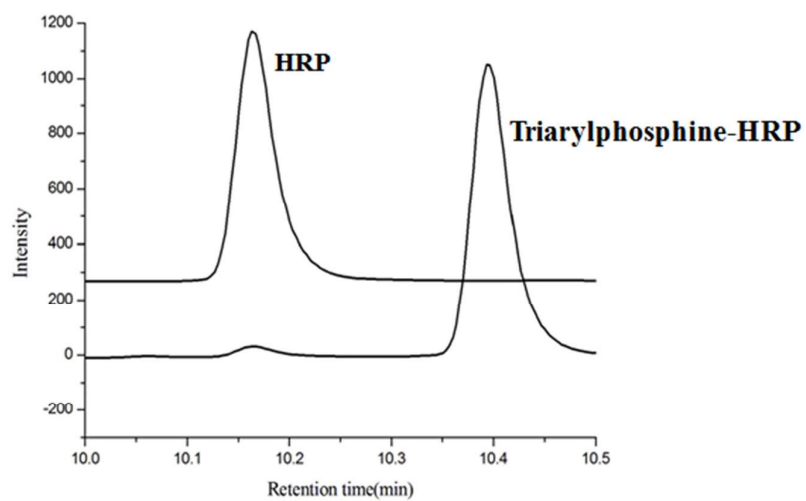


Figure S2. C<sub>4</sub> reverse phase liquid chromatography characterization of HRP and triarylphosphine-HRP

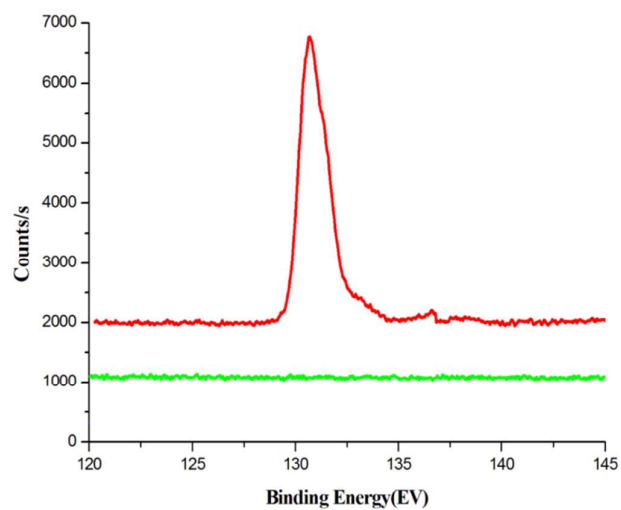


Figure S3. XPS spectra of phosphorus of poly-(NIPAM-co-AA) before (green) and after (red) triarylphosphine-HRPs functionalization.

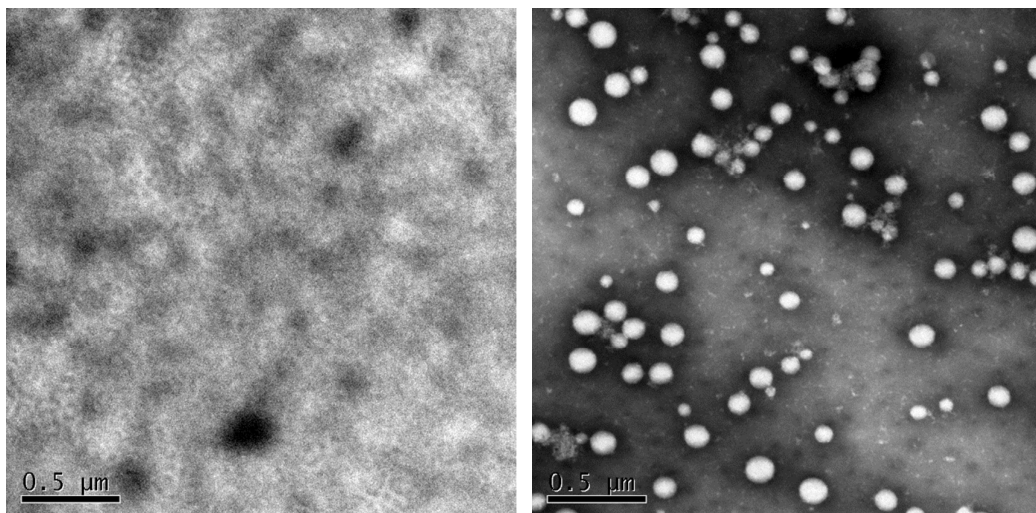


Figure S4. TEM images of PNATH collected at RT (left) or 40°C (right).

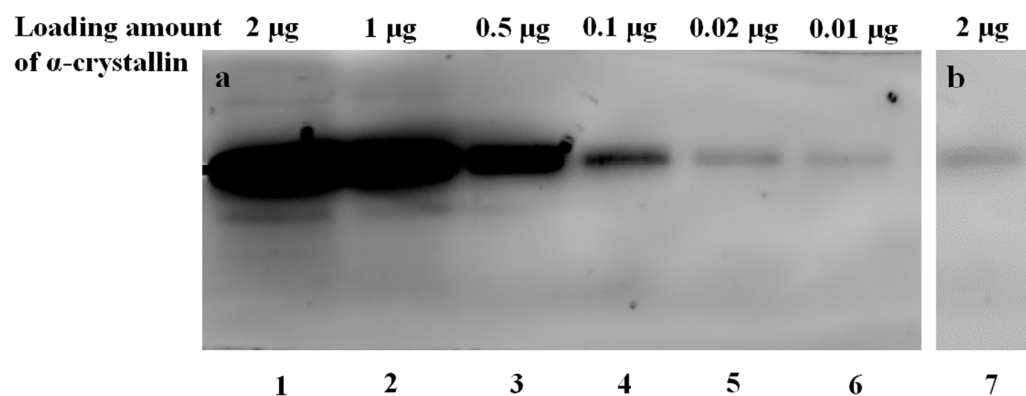


Figure S5. Detection sensitivity determination of PNATH based WB analysis using different loading amount of a standard O-GlcNAc protein,  $\alpha$ -crystallin (a) and WB analysis of  $\alpha$ -crystallin using commercial anti-O-GlcNAc antibody RL2 (b).

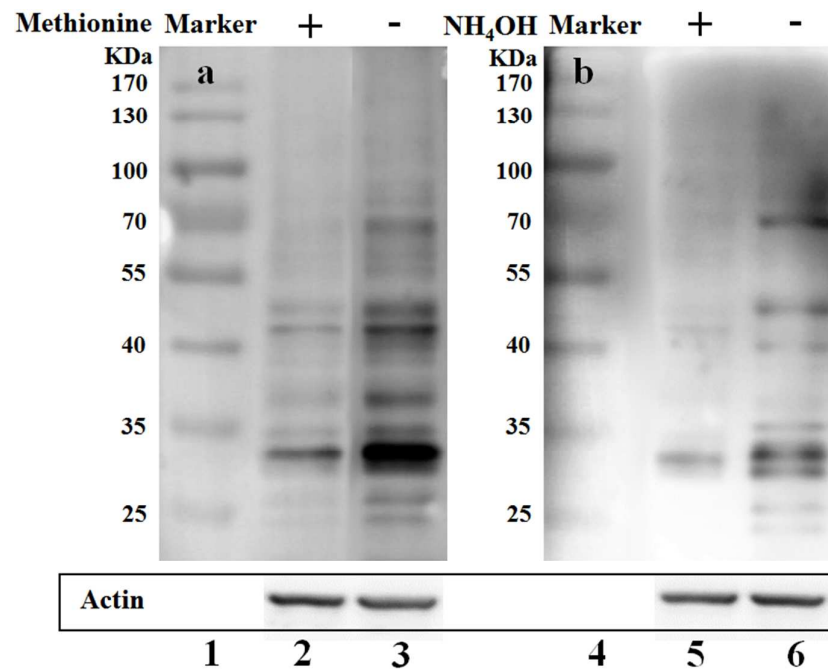


Figure S6. PNATH based WB analysis of newly synthesized proteins (a) and palmitoylation modified proteins (b) from HeLa cells. + and – refer to the extracted proteins with/without methionine treatment in (a) or with/without NH<sub>4</sub>OH treatment in (b).