

Supplemental Materials

Protein corona-induced aggregation of differently sized nanoplastics: Impacts of protein type and concentration

Xing Li¹, Erkai He², Bing Xia³, Yang Liu⁴, Peihua Zhang¹, Xinde Cao¹, Ling Zhao¹, Xiaoyun Xu¹, Hao Qiu^{1,*}

¹ School of Environmental Science and Engineering, Shanghai Jiao Tong University, Shanghai, 200240, China

² School of Geographic Sciences, East China Normal University, Shanghai, 200241, China

³ Anhui Academy of Environmental Science Research, Hefei, 230051, China

⁴ Faculty of Environmental Science and Engineering, Kunming University of Science and Technology, Kunming, 650500, China

*Corresponding author.

Email: haoqiu@sjtu.edu.cn (H. Qiu)

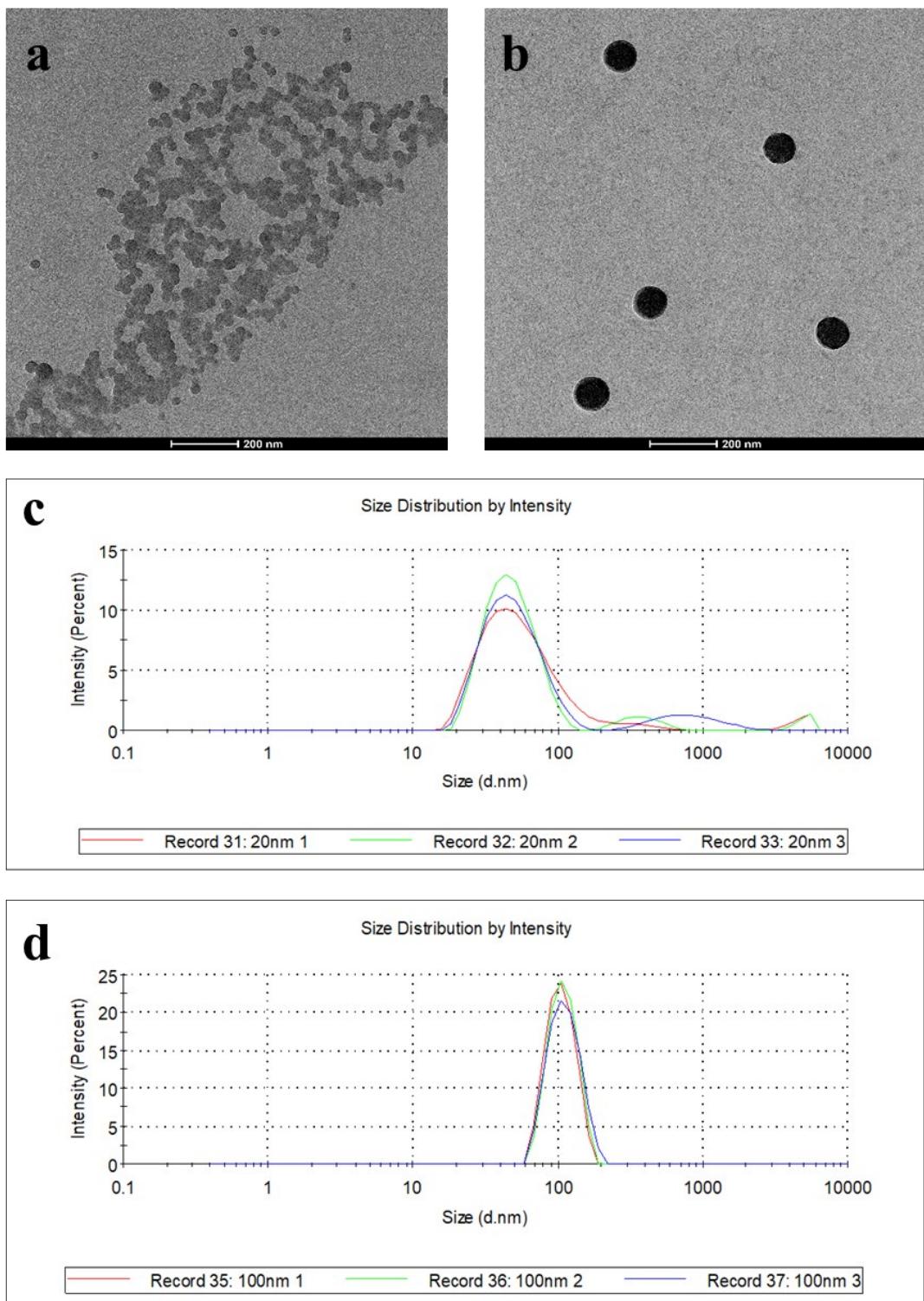


Fig.S1 TEM images (a and b) and particle size distributions (c and d) of the polystyrene nanoplastics (PSNPs) with different sizes used in this study.

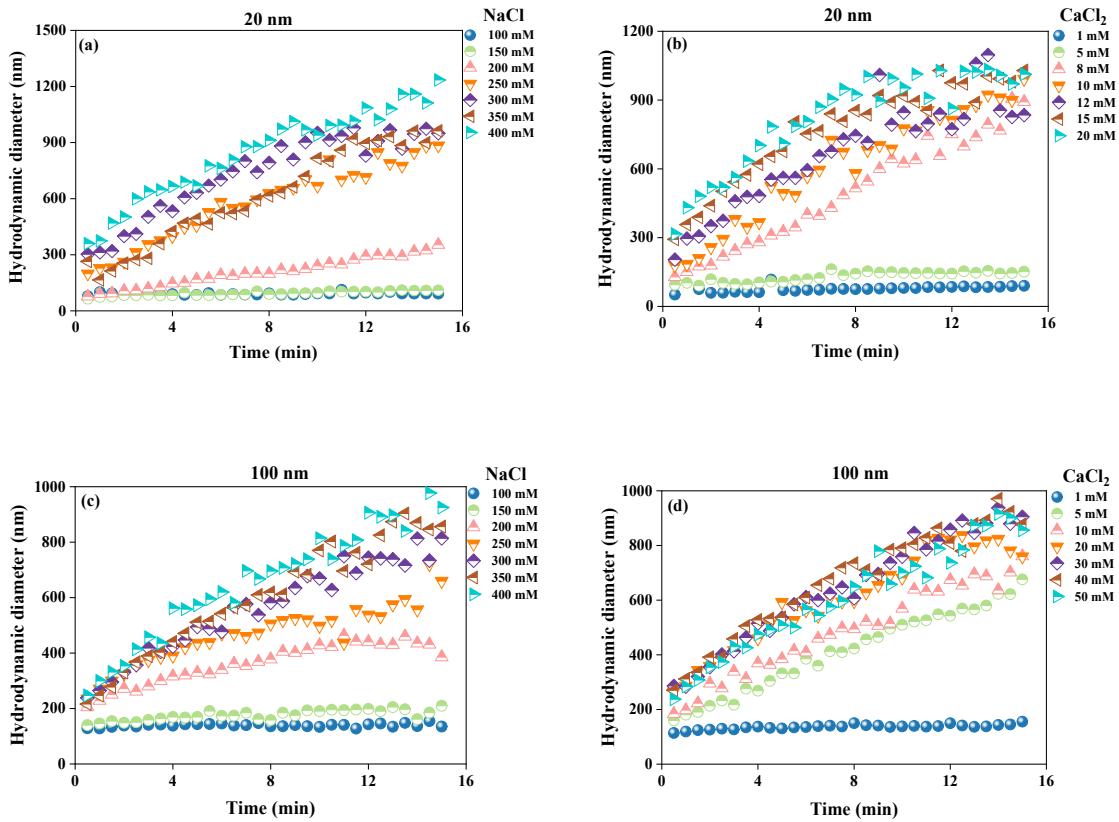


Fig. S2 Aggregation kinetics of two sized polystyrene nanoplastics (PSNPs) at various NaCl, and CaCl₂ concentrations.

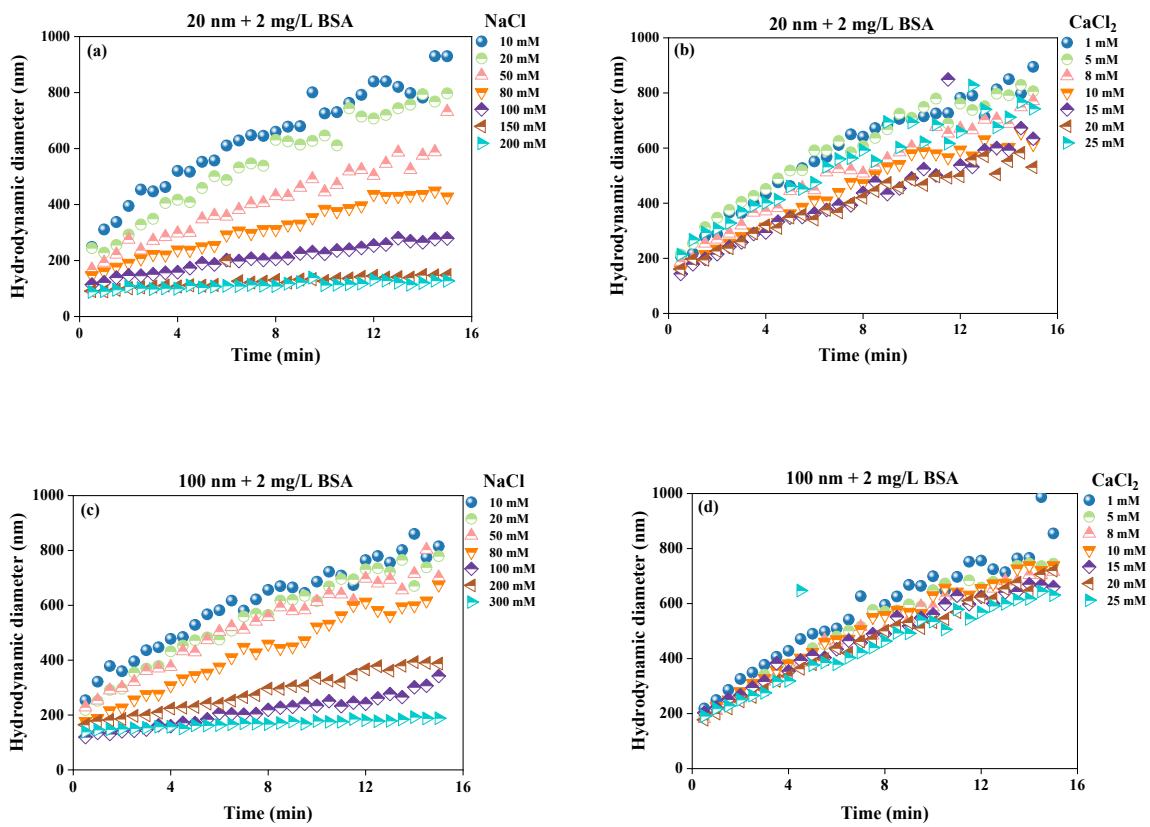


Fig. S3 Aggregation kinetics of two sized polystyrene nanoplastics (PSNPs) in the presence of 2 mg/L bovine serum albumin (BSA) as a function of NaCl, and CaCl₂ concentration.

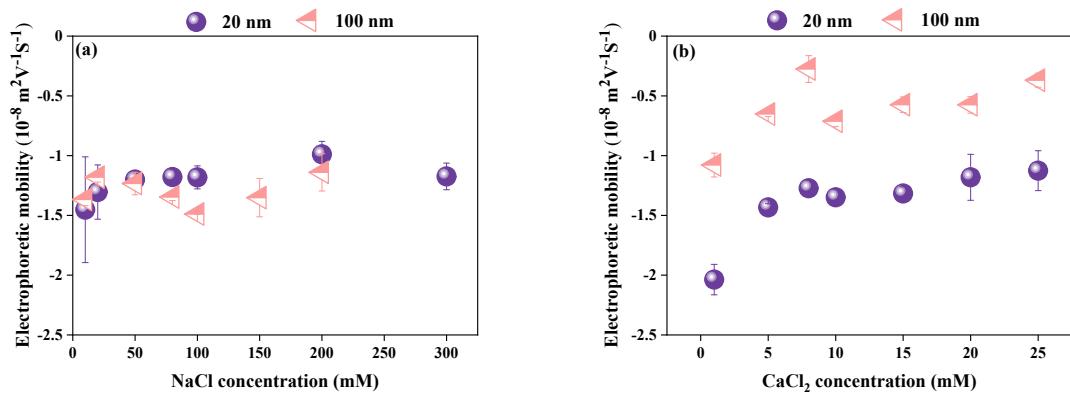


Fig. S4 Electrophoretic mobility of two sized polystyrene nanoplastics (PSNPs) as a function of NaCl, and CaCl_2 concentrations in the presence of 2 mg/L bovine serum albumin (BSA).

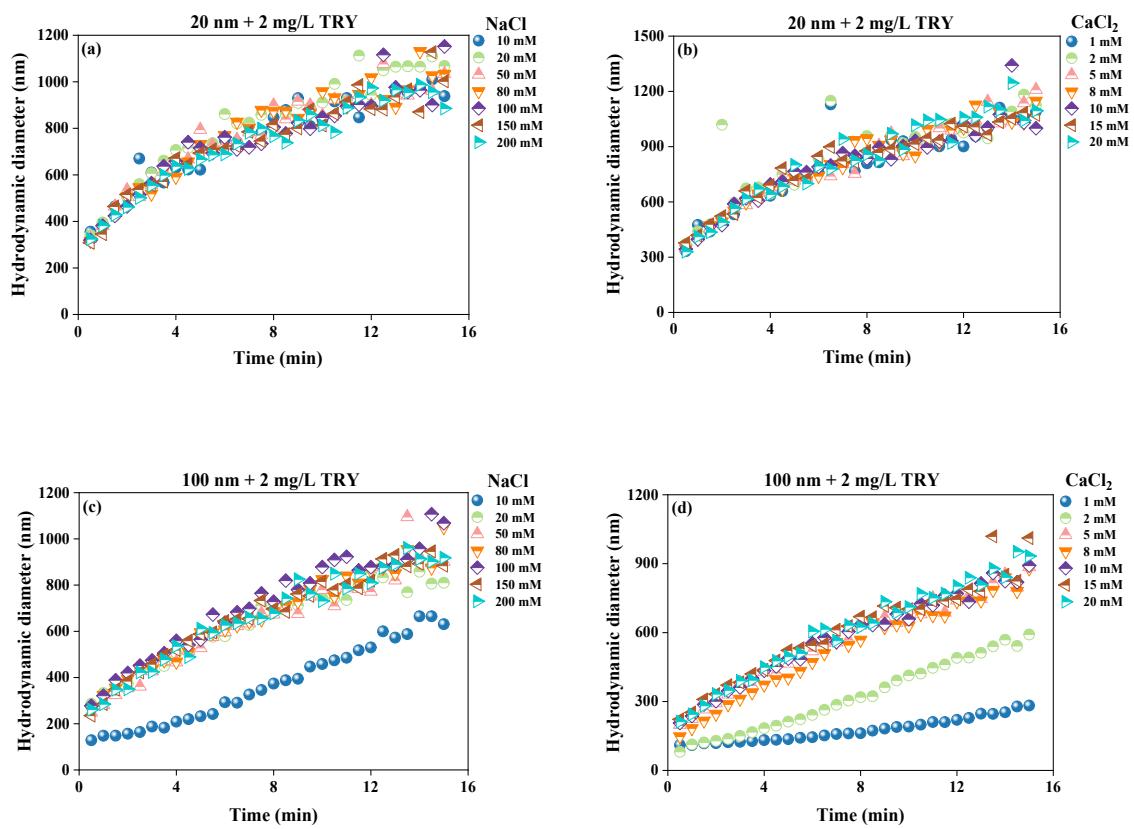


Fig. S5 Aggregation kinetics of two sized polystyrene nanoplastics (PSNPs) in the presence of 2 mg/L bovine trypsin (TRY) concentration as a function of NaCl, and CaCl₂ concentration.

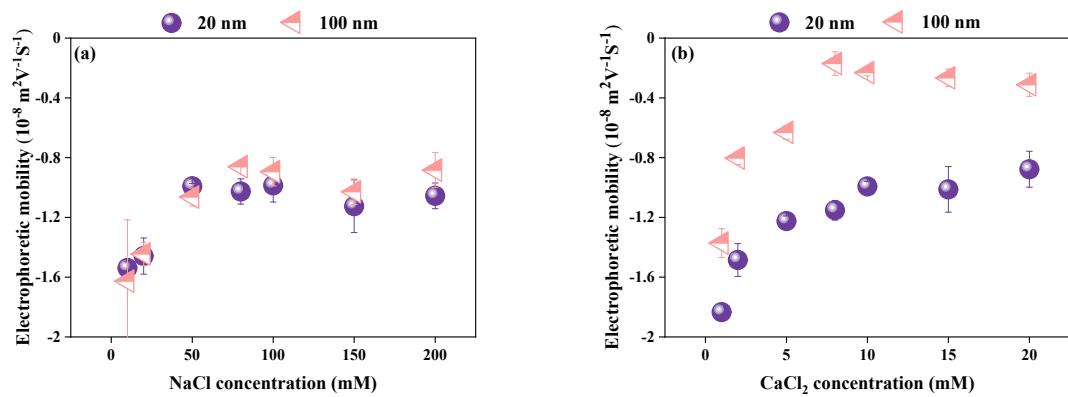


Fig. S6 Electrophoretic mobility of two sized polystyrene nanoplastics (PSNPs) as a function of NaCl, and CaCl_2 concentrations in the presence of 2 mg/L bovine trypsin (TRY).

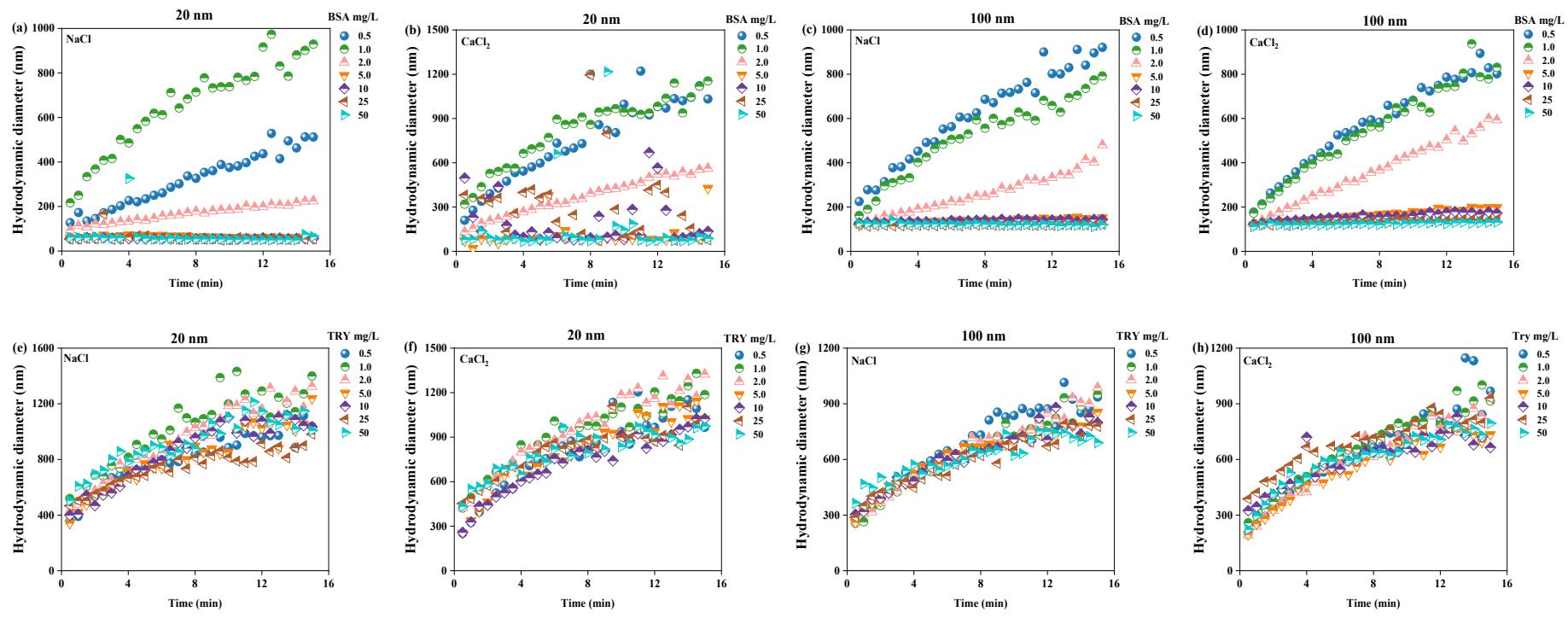


Fig. S7 Aggregation kinetics of two sized polystyrene nanoplastics (PSNPs) in the presence of electrolytes at a fixed concentration (100 mM NaCl, and 10 mM CaCl₂) as a function of bovine serum albumin (BSA) and bovine trypsin (TRY) concentration.