

**Supplementary Information**

**to**

**Novel Surface-Enhanced Raman Scattering-based Assays for  
Ultra-sensitive Detection of Human Pluripotent Stem Cells**

Jingjia Han<sup>1,#</sup>, Ximei Qian<sup>2,#</sup>, Qingling Wu<sup>1,2</sup>, Rajneesh Jha<sup>1</sup>, Jinshuai Duan<sup>4</sup>, Zhou Yang<sup>4</sup>,

Kevin O. Maher<sup>1</sup>, Shuming Nie<sup>2,3</sup>, Chunhui Xu<sup>1,2</sup>

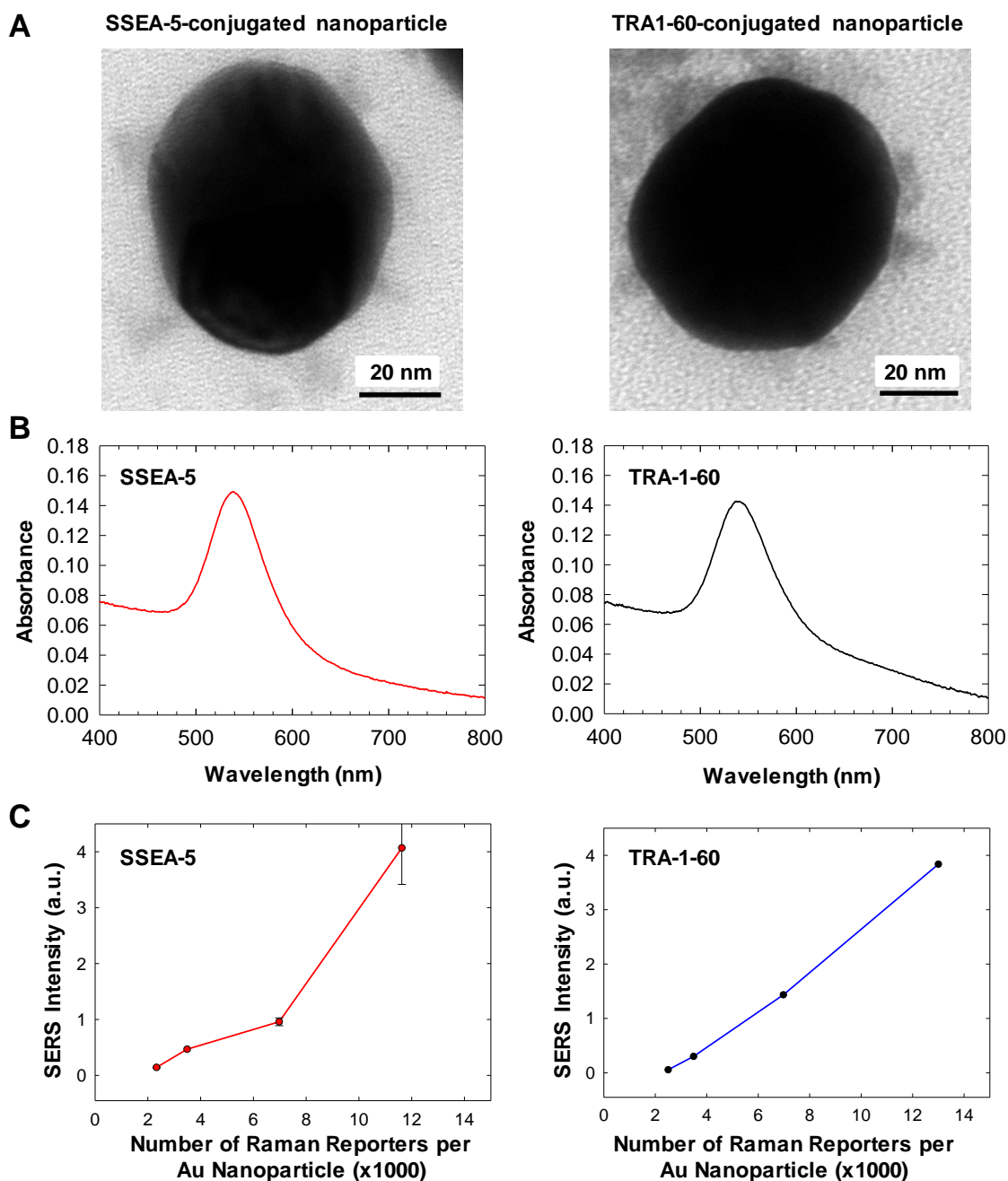
<sup>1</sup>Division of Pediatric Cardiology, Department of Pediatrics, Emory University School of Medicine and Children's Healthcare of Atlanta, Atlanta, GA 30322, USA

<sup>2</sup>Wallace H. Coulter Departments of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA 30322, USA

<sup>3</sup>College of Engineering and Applied Sciences, Nanjing University, Nanjing, Jiangsu Province 210093, China

<sup>4</sup>School of Materials Science and Engineering, University of Science & Technology Beijing, Beijing, China

#: These authors contributed equally to this work



**Supplementary Figure 1:** Characterization of gold (Au) nanoparticles conjugated with SSEA-5 IgG1 (Left) or TRA-1-60 IgM (Right). **(A)** Transmission electron microscopy (TEM) graphs. The nanoparticles had a diameter of ~60 nm. **(B)** Optical absorptions of SSEA-5-conjugated and TRA-1-60-conjugated nanoparticles displayed a typical profile for Au nanoparticles. **(C)** SERS intensity produced by Au nanoparticles prepared with different numbers of Raman reporter molecules per nanoparticle. For both SSEA-5-conjugated and TRA-1-60-conjugated nanoparticles, a ratio of ~12,000 Raman reporter molecules per nanoparticle produced the highest SERS intensity with minimal colloid aggregation and therefore was used throughout the experiments.