Supporting Information

Cys-diabody Quantum Dot Conjugates (immunoQdots) for Cancer Marker Detection

TEM Method: Transmission electron microscopy (TEM) specimens were prepared by pipetting 6μl of the sample suspension onto ultrathin Carbon Type-A 400-mesh copper grids (Tedpella Inc., Redding, CA) that had been glow-discharged. After 10 minutes, the grids were rinsed with deionized water to remove any buffer salts that may be present in the samples and wicked to almost dryness with filter paper. Phosphotungstic acid (PTA) of pH 7.0 was then added to the grids to negatively stain the samples. After one minute, the grids were completely dried using filter paper.

All the specimens were analyzed using the Philips CM20 FEG-TEM operating at 200kV. The microscope is also equipped with an energy dispersive x-ray spectrometer (EDS) for compositional analysis.

Size exclusion chromatography: Conjugated Qdots were subjected to size-exclusion chromatography on a Superdex 200 column (GE Healthcare, Piscataway, NJ) in PBS at a flow rate of 0.5 mL/min over one column volume (24 mL) on an AKTA purifier.

Figure 1. (A) TEM and HRTEM images of (Left panel) anti-HER2 iQdot 655 and (Right panel)mock conjugated Qdot 655. **(B)** PTA stained images of (Left panel) anti-HER2 iQdot 655 and (Right panel)mock conjugated Qdot 655.

Figure 2. Size exclusion chromatography of mock conjugated (dotted line) and anti-HER2 iQdot 655 (solid line) on Superdex 200 column.