Synthesis of Unique High Quality Fluorescence Quantum Dots for the Biochemical Measurements

We have succeeded in the synthesis of unique high quality fluorescent quantum dots, and nano-biohybrid materials for protein and DNA/RNA measurements are developed using the quantum dots. The nano-hybrid materials can be applied for detection of trace amounts of proteins using antibodies (immunoblotting). The sensitivity of the method was drastically improved.

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Figure 1: Fluorescence emitted from quantum dots.
Blue fluorescence can be emitted from small particles of approximately 2 nm in diameter, green from ~3 nm particles, yellow from ~4 nm particles, and red from large particles of ~5 nm.
The wavelength of the excitation light is 365 nm.

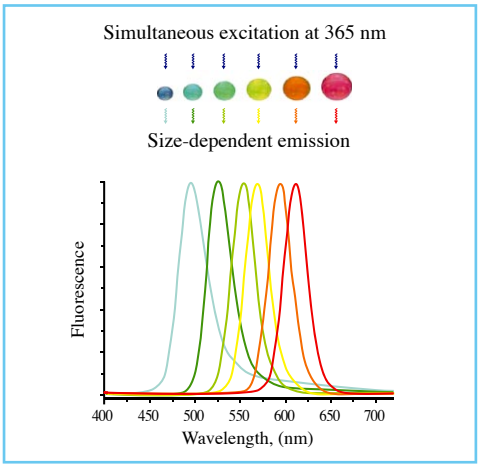

Figure 2: Fluorescence spectra depending on the size of quantum dots.