

**Title:** Supplementary Video 1:

**Description:** Dynamic binding process of single proteins over time in the same grayscale.

**Title:** Supplementary Video 2:

**Description:** Exposure of anti-IgA modified sensor surface to IgA, Tg, and IgM proteins.

**Title:** Supplementary Video 3:

**Description:** Behaviours of one IgM molecule absorbed on the anti-IgM modified sensor surface.