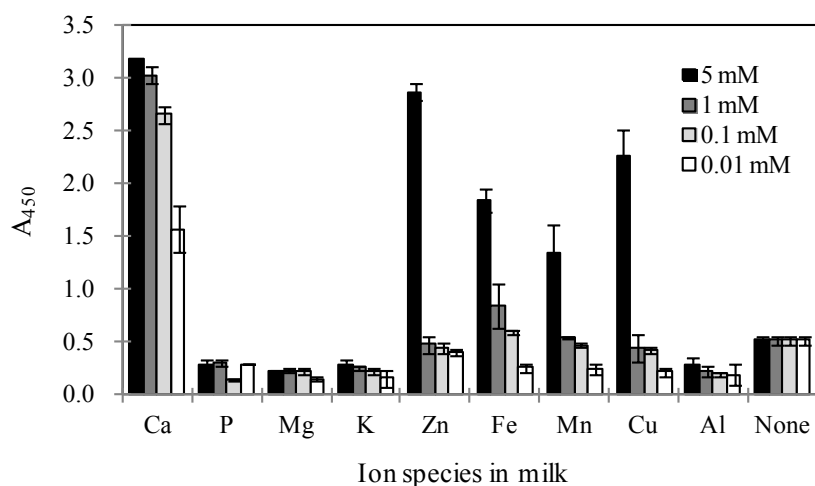


SUPPLEMENTARY INFORMATION



Supplementary Figure 1. Tests for the cross-reactivities with CBP for eight cations besides calcium contained in raw cow milk. The reactivity was determined via molecular conformation change of CBP immobilized on the surfaces of microtiter plate, which was monitored by adding the antibody (clone 3-6F) and sequentially binding a HRP-labeled secondary antibody. To maintain the initial binding complexes formed, the concentration of each ion in sample was kept constant in all media for reaction and washing. Such conditions were identical to those employed for the screening of antibodies specific to the calcium-CBP complex. As control, the immunoassay system provided dose responses to calcium in a range of 0.01 to 5 mM (Ca). Four cations, P, Mg, K, and Al, did not indicate a significant signal in all dose range comparing to background (None) and, on the other hand, the other cations, Zn, Fe, Mn, and Cu, showed high signals at about mM concentration span. Therefore, the ions displaying cross-reactivities were needed to check for their potential interferences in the calcium analysis.