Background Systemic lupus erythematosus (SLE) is chronic inflammatory disease caused by the production of various autoantibodies such as antinuclear antibodies and anti-dsDNA. Previous studies have shown that genetic and environmental factors influence onset, but the exact cause of SLE is unclear. The SLE is diagnosed with various clinical and immunologic indicators. We focused on finding biomarkers for a diagnosis of SLE.

Methods We compared the serum of normal (NC) and patients with SLE through screening, and selected highly expressed TCP1 antibodies as a candidate for SLE-specific biomarker. We produced GST-fusion TCP1 as a TCP1 antigen using SF9 cell and used RPLP0, 1, 2 known as lupus autoantibodies as controls. We confirmed the possibility of TCP1 autoantibody as a SLE-specific biomarker using sera of the NC patients with SLE or other autoimmune disease through Dot blot assay.

Results TCP1 antibody was expressed high in the most of SLE (n=10) patients as compared with the NCs (n=5). We performed Dot blot analysis using serum from NC (n=50), patients with SLE (n=100), and patients with other autoimmune disease including rheumatoid arthritis (n=25), systemic sclerosis (n=30), and Bechet’s disease (n=15). As a result, the TCP1 antibody were detected 79 out of 100 patients with SLE and it was more commonly expressed compared with NC and other autoimmune diseases. The sensitivity of TCP1 antibody in SLE patients was 79%, and the specificity was 90%.

Conclusions Therefore, TCP1 antibody is the potential to be a specific biomarker of SLE and is expected to be a new biomarker for the diagnosis of SLE.

Abstract LSO-018 Figure 1 Univariate regression analysis of the association of biochemical variables with active SLE. Red (AA) and pink (whites) whiskers represent statistically significant variables, while grey (white) and black (AA) represent non-significant variables.