

**Supplementary Fig. 1.** Preparation of recombinant MTBK\_24820. The recombinant protein was overexpressed and purified in Escherichia coli using Ni-NTA affinity chromatography, followed by an anion exchange purification system. Purified MTBK\_24820 was confirmed by SDS-PAGE. Black arrows represent the eluted fraction of target protein in FPLC collector.