Thermostable phytases are higher in demand in industries like food and feed. These are cost effective as compared to the utilization of inorganic phosphorus. In the present study, cloning and expression of a novel thermostable phytase from *T. maritima* was carried out. *E. coli* BL-21CodonPlus(DE3) was used for the expression of phytase gene. Phytase gene was amplified and restricted by using *Nde*I and *Hind*III restriction enzymes.The gene was then ligated with purified pET (5.4 kb) and host *E. coli* was transformed. The gene was induced with the different conc., of IPTG (0.05 mM, 0.1 mM and 0.2 mM) and lactose (50 mM and 100 mM). Finally, SDS-PAGE was performed to confirm the expression of the recombinant protein. A band of 70 kDa was obtained for phytase enzyme which shows the expression of recombinant phytase gene.