Malaria is a parasitic disease caused by *Plasmodium* species and responsible for approximately 240 million infections worldwide annually. Previous research discovered the enzyme PBLP (Plasmodium BEM46- like protein), an Alpha/Beta hydrolase which is conserved across all *Plasmodium* species. PBLP is expressed during all stages of the *Plasmodium yoelii* life cycle, localizing to the parasitic membrane in most life stages. Deletion of PBLP impairs proliferation in infected red blood cells of hosts, leading to decreased infection levels. This project aimed to refine expression protocols, and purification of two PBLP constructs lacking transmembrane domains- wild type (WT) and catalytically-dead mutant (S153N)- to produce protein for assays investigating enzymatic activity. PBLP-S153N has been modified to replace the catalytic serine with asparagine, which renders the catalytic triad ineffective. Plasmids containing amino acid sequences for WT and S153N were transformed into competent BL-21 *E.coli*. PBLP was extracted using sonification to break apart E.*coli* cells. Expressed proteins were purified from resulting lysates using several separation techniques. Protein identification was performed using SDS-PAGE, showing dramatic decreases in potential PBLP concentration after lysate and pellet samples. Possible reasons for the low yield of PBLP was incomplete lysing, causing PBLP to remain in the pellet. In subsequent attempts at expression and purification, lysis steps for sonication were replaced with Lysozyme. SDS-PAGE gel results showed the alternative lysis to be ineffective in isolating PBLP from the E.coli periplasmic space. Future studies should attempt to find more effective means of separating PBLP from E.*coli* cellular components.