Pyrimidine base catabolism usually involves either a reductive pathway or an oxidative pathway with the former more prevalent in humans as well as in plants, unicellular eukaryotes and bacteria [1-4]. e reductive pathway involves three enzymes which include dihydropyrimidine dehydrogenase (EC 1.3.1.2), dihydropyrimidinase (EC 2.5.2.2) and -ureidopropionase (EC 3.5.1.6) [2-4]. e importance of the catabolism of pyrimidine bases in humans is directly related to the use of 5- uorouracil as a chemotherapeutic agent during the treatment of cancer [5,6]. Genetic de ciencies for any of the reductive pathway enzyme activities also appear to result in problems for those individuals a ected [7,8]. e pyrimidine catabolic pathway is thought to be also involved in the degradation of pyrimidine-based antimicrobials. e initial enzyme dihydropyrimidine dehydrogenase is important to the e ectiveness of 5- uorouracil as a chemotherapeutic