SUMMARY

1. The enzyme SDH is demonstrated in *P. falciparum* (T_9 isolate) and localized in the cytoplasmic compartment.

2. It has been purified by using three - step purification protocol from supernatant fraction of *P. falciparum* (T_9 isolate), Mono Q anion-exchange, Mono S cation-exchange and Superose 6 gel filtration chromatographic column.

3. It has native molecular weight of 86-91 KDa. By SDS-PAGE, the malarial SDH composes of two subunits with molecular weight of 56.4 ± 3.4 KDa for Fp subunit and 35.0 ± 1.7 KDa for Ip subunit.

4. The malarial SDH is found to be extremely labile. It was more stable at -196°C than -20°C.

5. The apparent Michaelis-Menten constants (Km) for succinate and CoQ_0 are 3.01 and 0.20 μM, and kcat values are 0.11 and 0.06 min^{-1}, respectively.

6. Fumarate, the product of the enzyme catalysis, was a competitive inhibitor with Ki value of 80.99 μM. Malonate and oxaloacetate were substrate analog inhibitors with Ki values of 13.02 and 12.06 μM. Plumbagin was

found to inhibit more than 50 % at a concentration of 5 μM.

7. Antimalarial drugs, such as chloroquine, artemisinine and atovaquone were found to have no effect on the malarial SDH.

8. The malarial enzyme was relatively insensitive to 2-thenoyltrifluoroacetone, a known inhibitor of mitochondrial enzyme.