SUMMARY

1. The enzyme DHODase from P.falciparum, a human malaria, has been purified to near homogeneity by using detergent solubilization and followed by anion–exchange and affinity chromatography.

2. The purified enzyme had a relative molecular weight of 55±5 kDa on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS–PAGE) and of 53 ± 6 kDa by gel filtration chromatography.

3. The enzyme was found to be a monofunctional protein and had NH_2–terminal blocked.

4. The specific activity of the enzyme in crude homogenate was 8.31 ± 6.26 nmol/min/mg (n=13) and in Triton X–100 solubilization was 3.30 ± 2.61 nmol/min/mg (n=13).

5. Their specific activities and protein concentrations were highest in trophozoite stage parasite and the enzyme was more stable at –196 °C than –20 °C.

6. The Km value for L–dihydroorotate of the enzyme was 88.7 ± 24.1 µM and Kcat value was 0.36 ± 0.04 min^{-1} .

7. Analogs of the reaction product, 5–fluoroorotic acid (FOA) and 5–methylorotic acid (CH_3OA) were competitive inhibitors with 50% inhibition concentrations at 0.16 and 5.41 mM respectively.