**ABSTRACT**

The present disclosure provides a composition for enhancing effect of an inhibitor in inhibiting $NAD^+/NADP^+$ or NADH/NADPH dependent enzymes. The inhibition of the $NAD^+/NADP^+$ or NADH/NADPH dependent enzymes such as Enoyl-ACP reductase (ENR) by the composition of the present disclosure serves as a target for treating malaria and other infectious diseases. The present disclosure provides composition comprising inhibitor and polyphenol, wherein the polyphenol was found to enhance the inhibitory activity of the inhibitor. The present disclosure provides method for treating an infectious disease comprising administering an effective amount of the composition of the present disclosure to patients in need thereof. The present disclosure further provides a method for identifying a compound that enhances the effect of the inhibitor, a method of determining the antimalarial activity of a compound and use of polyphenol as a bioenhancer that enhances effect of an inhibitor for inhibiting $NAD^+/NADP^+$ or NADH/NADPH dependent enzymes. The present disclosure provides a composition comprising inhibitor and a polyphenol wherein the polyphenol enhances effect of the inhibitor for inhibiting aldose reductase for treating complications of diabetes that include diabetic retinopathy, cataract neuropathy and neural complication.