

ABSTRACT

IN VIVO ANTIMALARIAL ACTIVITY STUDY OF ANDROGRAPHOLIDE-CHITOSAN SOLID DISPERSION IN *Plasmodium berghei* INFECTED MICE

Risqy Sobriya Anggryni

Andrographolide (ADG) is a diterpene lactone derived from the herb *Sambiloto* (*Andrographis paniculate*) which have some of pharmacological effects. Its poorly soluble in water causes limited absorption and bioavailability. Solid dispersion systems can be used to increase the solubility and dissolution rate of medical substances with low water solubility. Solid dispersion systems of andrographolide-chitosan (SDS ADG-CTS) is prepared by the solubilization-spray drying method. The purpose of this study was to determine the effect of andrographolide-chitosan solid dispersion system on the antimalarial activity in *Plasmodium berghei* infected mice. Characterization of andrographolide-chitosan solid dispersion system using SEM showed the shape of spherical, DTA showed decrease endothermic peak and a lower melting point in the solid dispersion system, and X-ray difactogram showed a decrease in the intensity of the diffraction showing the crystallinity of andrographolide. *In vivo* antimalarial test was done using Peter's 4 days suppressive test. The result showed the *in vivo* antimalarial activity of andrographolide-chitosan solid dispersion systems increase inhibition of andrographolide against *Plasmodium berghei* mice infected. Its average percentage inhibition at fifth day is $54,71 \pm 2,14\%$ and increased by 1,56 times if compared with andrographolide.

Keywords : Andrographolide, chitosan, solid dispersion, in vivo antimalarial test, Percent inhibition