

CHAPTER V

CONCLUSION

The PG facial-patch containing asiaticoside was developed by increasing the solubility of asiaticoside in PG. The mechanical property and the release profile were evaluated. In addition, the clinical irritation testing and the efficacy were investigated. The results can be concluded as following:

The propylene glycol was used to increase the solubility of the asiaticoside and compatibility to PG. The solubility of asiaticoside in propylene glycol was 1:9.5.

The suitable plasticizer for PG eye patch preparation was 15% w/w sorbitol and 4.75% w/w propylene glycol. This formulation was also used for solubilizing of asiaticoside (formula 8) according to their mechanical properties in moderate tensile strength, high elongation and low Young's modulus.

The concentration of 5 %w/w PG gave a soft and tough film that has a satisfactory film for using as the facial-patch and had mechanical properties in appreciated value.

The amount of 10 g of PG mixture solution was selected for casting the patch since they gave an appropriate thickness for using on the face

The backing layer of the PG facial-patch was 5 %w/w ethylcellulose contained dibutylphthalate as a plasticizer resulted in a good appearance of the film and compatibility with the PG patch.

The *in vitro* release study of asiaticoside from PG facial-patch was investigated. The 90 % asiaticoside was released from the PG patch within 1 hour.

The *in vivo* irritation test in 6 rabbits show the significantly non-irritation of the 6 non-abraded skin rabbits, but in the 6 abraded skin rabbits, they are significantly show mild irritation. In the single application test in 200 volunteers, 2 of them showed very slightly erythema with the PG patch. Addition to this result, the PG patch was accepted with non-irritation.

The clinical efficacy study of the PG patch, the 20 volunteers used the patch at the forehead 4 weeks, the transepidermal water loss value (TEWL) and elasticity were measured by DermaLab® moisture probe. The TEWL value and elasticity were significantly decreased that resulted in the improvement of the skin after application. From the macroscopic photograph, the wrinkle line was significantly decreased after 4 weeks of the application and can clearly observation.