



CHAPTER I

INTRODUCTION

Now there are many anti-wrinkle facial products have been used, and have a variable dosage form such as gel, cream, emulsion, patch and mask. The facial-patch is an interesting and desirable dosage form. Nowadays in the cosmetic industries, the facial-patch contains the polymer from natural product such as the cellulose derivatives or synthesis polymer as polvinylpyrrolidone and the moisturizing agent e.g., aloe vera, microcollagen that can act as softening, smoothing, stimulating and refreshing the skin. The degree of turgescence which leads to the temporary minimizing of wrinkles, may likewise be controlled by mean of adequate formulation.

The purpose of the facial-patch can be explained as; the outer layer of the skin, contains up to 72% of water and because the water loss from the skin to the air all the time. Therefore the moisture of facial skin will be higher if the facial-patch can slow down the breathing of the skin, including increase the moisture content of the facial skin which effect to reduce the wrinkle on the face. The thickness of the stratum corneum of the facial skin is about 0.03 mm. The natural polymer should be used to prepare the patch.

Polysaccharide gel (PG) is a natural polymer that isolated from durian fruit-hulls Pongsamart and Panmaung (1998). PG has a film forming property similar to pectin and cellulose derivatives such as hydroxypropyl methyl cellulose. Gerddit (2002) prepared satisfactory "PG" film product from Polysaccharide gel. The PG film has a good healing property as perform in pig-skin (Nakchat, 2002). The PG film containing triamcinolone gave good mechanical property of the film and has efficiency to treat aphthous stomatitis (Tinmanee, 2004).

The anti-wrinkle effect involved with the collagen synthesis like the wound healing effect. There are many substances and herbs for treatment of the wrinkles. Asiaticoside extracted from *Centella asiatica* (L.) (Urb.) is rejuvenate substance that can increase the collagen synthesis in the photoaging (Shukla and Rasik,1999). The asiaticoside are used widely in the facial product, but not yet in facial patch formulation. A combination of PG and asiaticoside in facial-patch are expected to give a synergistic anti-wrinkle effect of collagen synthesis.

The purpose of this study

1. To formulate polysaccharide gel (PG) facial-patch from fruit-hull of durian containing asiaticoside.
2. To determine the mechanical properties of PG facial-patch.
3. To study the *in vitro* diffusion of asiaticoside through PG facial-patch.
4. To study the *in vivo* moisturizing and anti-wrinkle activity of asiaticoside PG facial-patch.
5. To study the *in vivo* skin irritation of the PG facial-patch.