Independent Study Title	Comparative Study on Composition and Gel Formulation of Aloe Vera Extract
Author	Chonlada Komarakul Na Nakorn
Degree	Master of Science
Advisor	Dr. Phanuphong Chaiwut
Co-advisor	Dr. Punyawatt Pintathong

ABSTRACT

Aloe Vera used in cosmetic formulation as anti-inflammatory, soothing and wound healing. Polysaccharide and Anthraquinone components are the indicators in Aloe Vera. This study was to determine the content of Mannose-6-Phosphate and Aloe-emodin in the various forms of Aloe vera extract which are fresh, liquid and powder forms. Total carbohydrate content was carried out to analyse the glucose and mannose contents, fresh aloe vera extract contains 0.2329 g glucose eq./g, 0.178 g mannose eq./g liquid commercial extract contain 0.0370 g glucose eq./g. , 0.029 g.mannose eq./g and for Aloe Vera powder 200x extract contains 1.2849 g glucose eq./g, 0.981 g mannose eq./g

The Ultra-high performance liquid chromatography (UPLC) method was described to investigate the content of Aloe-emodin in Aloe vera extract. The method involved Column C_{18} (1.7 μm, 2.1 x 100 mm) at 25˚C with the mobile phase of methanol and 2% acetic acid (70:30, v/v), absorption at 254 nm. The retention time of Aloe-emodin was 2.9 minutes. The assay was linear from 10 to 100 μg/ml ($r^2 \geq 0.9921$).

Aloe vera extract were using as an active ingredient in after sun gel for various types of aloe vera extracts into 4 formulations include blank formulation, fresh aloe vera extract formulation, aloe vera liquid extract formulation and aloe vera powder formulation, stability test was measured via physical appearance by kept under freeze thaw condition. After the freezing thaw condition. stability test the gel was measured pH and viscosity. The result showed that the viscosity of formulation with fresh aloe vera extract was decreased from 31,800 cps to 79,200 cps and for the formulation of liquid extract and powder extract had viscosity from 81,800 cps to 70,300 cps and 101,000 to 58480 cps respectively.

Keywords: Aloe-emodin/Aloe Vera/Total Carbohydrate content/UPLC