CHARACTERIZATION OF CARBOXYMETHYL *Plectranthus esculentus* STARCH.A POTENTIAL BIOMATERIAL FOR PHARMACEUTICAL APPLICATION

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ABSTRACT

P. *esculentus* starch was chemically modified via carboxymethylation. The product was characterized using 1D- Nuclear Magnetic Resonance (NMR) spectroscopy. Physicochemical characteristics of the native and carboxymethyl starch such as Viscosity, solubility, Swelling power and viscosity-average molecular weight were also determined. The result showed that the starch from *P. esculentus* starch is composed of α −glucose linked together at 1→4.The bulky carboxymethyl groups introduced into the native starch was detected by ^{13}C-NMR around 178.5ppm. The carboxymethyl starch with degree of substitution 0.40±0.02 had higher physicochemical properties than the native starch. The result showed that chemical modification by carboxymethylation may improve the physicochemical properties of polysaccharides resulting in higher efficacy for effective utilization in starch-based industries.

Keywords: Carboxymethylation, *Plectranthus. esculentus*, starch, NMR.