Independent Study Title	Inhibition Efficacy of Thai Pomelo Peel Extract Against α-Amylase and α-Glucosidase in Vitro
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ABSTRACT

Hyperglycemia is a disorder characterized by an excessive concentration of glucose circulation in the bloodstream, and it can be brought on by impairment to the blood sugar regulation system. An inadequate amount of insulin leads to type 2 diabetes. One kind of treatment for Type 2 diabetes is lowering postprandial glucose levels. This can be achieved by blocking the digestive tracts carbohydrate hydrolytic enzymes, which will delay the absorption of glucose: α-glucosidase and α-amylase Acarbose is a medication taken orally. The medication works as a potent enzyme inhibitor to delay the pace at which carbohydrates break down, so slowing down the absorption of glucose. Regretfully, using the medication can have certain major side effects that are typically experienced concurrently, such as liver disease. Pomelo peel extract has been studied on such an enzyme inhibitor property as riches in flavonoid content. Pomelo (*Citrus maxima*) is one of the citrus fruits that are the most abundant fruit grown throughout the world especially in Thailand and Asia, Thong Dee and Kao Nam Pheung are the famous predominant commercial cultivars in Thailand and are the top cultivar that contain higher number of flavonoids among others Both are the selected cultivars on this. the result in this study showed both Kao Nam Pheung and Thong Dee showed the ability to inhibit digestive enzymes in vitro. However, in comparison to the conventional drug acarbose that used as enzymes inhibitor, both

extracts showed lower efficacy as the IC_{50} of Kao Nam Pheung and Thong Dee are greater, compared to IC_{50} of acarbose on both α -amylase inactivation (IC_{50} = 21.87 and 21.63 and 7.71 mg/ml), and α-glucosidase inactivation (IC_{50} = 2,222.84, 1924.89 and -2,144.80 μg/ml) respectively.

Keywords: Pomelo Peel, Carbohydrate-Hydrolyzing Enzyme Inhibitor, α-Amylase, α-Glucosidase