Thesis Title Effect of Stevioside on Renal Functions in Rat.

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ABSTRACT

Stevioside is a sweetening product extracted from leave of Stevia Rebuadiana Bertoni. It was reported to have effects on systemic as well as renal system. Therefore, changes in renal function observed after stevioside administration can not be concluded with certainty whether it is the direct effect of stevioside on renal function or a consequence from systemic change.

By infusing stevioside directly into renal artery of rats in this study, the direct effect of stevioside on renal function could be examined. It was demonstrated that infusion stevioside at the rate of 0.8 µg/min into renal artery could reduce water and sodium reabsorption in proximal tubule of both kidneys without changing renal hemodynamics and renal filtration rate. These data suggested that stevioside may alter tubular handling of sodium and fluid at the tubular level. To evaluate this

possibility, the proximal tubular water and sodium reabsorption as measured by lithium clearance were determined. It was found that inhibition of water and sodium reabsorption in proximal renal tubule was observed after stevioside administration. The right kidney which was exposed to lower concentration of cross-circulated stevioside, similar responses were observed but with a slower rate than that of the left kidney.

At higher infusion rate of 6.4 µg/min, stevioside was found to increase renal blood flow in addition to inhibitory effect on water and sodium reabsorption in proximal tubule which found at low dose treatment. This increase in renal blood flow occurred at the later period of the experiment, and it might enhance diuresis observed in this group.