

**Abstracts (Poster Presentation)****Angiotensin-Converting Enzyme Inhibitory and Antioxidant Activities of Kam-Lung-Rad-Cha-Si, A Thai Herbal Formulation, Extracts**

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**Abstract**

**Introduction:** Hypertension is induced by angiotensin-converting enzyme (ACE) and oxidant activities. A Thai traditional medicinal, Kam-Lung-Rad-Cha-Si, recipe (KLR) is used for treating hypertension. Moreover, there is no scientific report supporting the use of the KLR in the Thai traditional theory.

**Objectives:** To investigate the effects of the aqueous and ethanolic KLR extracts on ACE inhibitory and antioxidant activities.

**Methods:** Thirty-four medicinal plants were extracted with 95% ethanol maceration (KLRE) and aqueous decoction (KLRA). All extracts were measured total phenolic contents (TPC) and total flavonoid contents (TFC). The extracts were evaluated for antioxidant activity with DPPH radical scavenging assay and anti-hypertensive effect by ACE inhibitory assay by comparing with positive controls i.e., butylated hydroxytoluene (BHT) and Captopril, respectively.

**Results:** Our results showed that KLRA and KLRE had TPC ( $192.36 \pm 1.71$  and  $92.24 \pm 1.83$  mg GAE/g, respectively) and TFC ( $138.18 \pm 1.14$  and  $85.88 \pm 1.67$  mg QE/g, respectively). The results indicated that KLRA and KLRE had an antioxidant capacity. Moreover, KLRA and KLRE presented an antioxidant activity by  $EC_{50}$  values were  $12.45 \pm 0.47$  and  $17.26 \pm 0.80$   $\mu\text{g/mL}$ , respectively, and KLRA did not differ to inhibit DPPH radicals when compared with BHT ( $10.94 \pm 0.24$   $\mu\text{g/mL}$ ). In addition, KLRA and KLRE inhibited the ACE activity and had better ACE inhibition than Captopril by  $IC_{50}$  values were  $36.57 \pm 1.13$ ,  $30.75 \pm 1.04$ , and  $8.41 \pm 0.85$   $\mu\text{g/mL}$ , respectively.

**Conclusions:** The KLRA and the KLRE presented antioxidant and anti-hypertensive effects. Thus, the KLR remedy may be used to treat hypertension following the Thai traditional medicine theory.

**Keywords:** Kam-Lung-Rad-Cha-Si recipe, Angiotensin-converting enzyme inhibition, Antioxidant activities, Hypertension

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