

**Abstracts (Oral Presentation)****Anti-inflammatory Activity of Kheaw-Hom Remedy in Lipopolysaccharide-stimulated Macrophage Cells and Carrageenan-induced Paw Edema in Rats**

Kanmanee Sukkasem<sup>1</sup>, Arunporn Itharat, Ph.D.<sup>1,2\*</sup>,  
Krittiya Thisayakorn, Ph.D.<sup>3</sup>, Sumalee Panthong, Ph.D.<sup>1,2</sup>,  
Sunita Makchuchit, Ph.D.<sup>1,2</sup>, Janjira Inprasit<sup>1</sup>, Nuntika Prommee<sup>1</sup>,  
Wicheian Khoenok<sup>3</sup>, Kanjana Sriyam<sup>3</sup>, Darunee Pahusee<sup>3</sup>

**Abstract**

**Introduction:** Kheaw-Hom (KH) remedy has been widely used to treat inflammation and fever in children with measles and chickenpox. However, its anti-inflammatory activity, both *in vitro* and *in vivo*, has not been scientifically tested.

**Objectives:** To evaluate the *in vitro* and *in vivo* anti-inflammatory activities of KH remedy

**Methods:** The *in vitro* anti-inflammatory activities of the aqueous extract (KHA) and ethanolic extract (KHE) were investigated using lipopolysaccharide (LPS)-stimulated nitric oxide (NO), prostaglandin E<sub>2</sub> (PGE<sub>2</sub>), and tumor necrosis factor-alpha (TNF-α) in macrophage RAW 264.7 cells. The *in vivo* anti-inflammatory activity of KHE and KH powder (KHP) was determined using carrageenan-induced paw edema in rats and the PGE<sub>2</sub> production in tissue samples was examined using ELISA kit.

**Results:** KHE exhibited anti-inflammatory activities through the suppression of PGE<sub>2</sub>, NO, and TNF-α production with IC<sub>50</sub> values of 19.69 ± 2.09, 39.93 ± 3.28, and 85.07 ± 2.61 μg/mL, respectively, while KHA did not. Interestingly, KHP orally administered at the dose of 100 mg/kg significantly reduced rat paw edema at 1, 2, and 3 hours (37.25%, 25.00%, and 27.09%, respectively) while KHE at the dose of 100 mg/kg noticeably reduced at 2 and 3 hours (21.67% and 19.49%) after carrageenan injection. KHP at the dose of 100 mg/kg showed maximum inhibition of PGE<sub>2</sub> production with the PGE<sub>2</sub> levels of 15.46 ± 1.33 ng/mL.

**Conclusions:** The findings from *in vivo* study strongly parallel the results of the *in vitro* study and support the traditional use of KH as a potent anti-inflammatory and antipyretic remedy.

**Keywords:** Kheaw-Hom remedy, Anti-inflammatory activity, Carrageenan-induced paw edema, *In vitro*, *In vivo*

**DOI:** <https://doi.org/10.14456/2022s10717>

<sup>1</sup> Department of Applied Thai Traditional Medicine, Faculty of Medicine, Thammasat University, Pathum Thani, Thailand

<sup>2</sup> Center of Excellence in Applied Thai Traditional Medicine Research (CEATMR), Thammasat University, Pathum Thani, Thailand

<sup>3</sup> Expert Center of Innovative Herbal Products (InnoHerb), Thailand Institute of Scientific and Technological Research (TISTR), Technopolis, Pathum Thani, Thailand

\*Corresponding author: Arunporn Itharat, Ph.D., Department of Applied Thai Traditional Medicine, Faculty of Medicine, Thammasat University, Pathum Thani, Thailand

Email: iarunporn@yahoo.com