

OR-75***Kaempferia Parviflora* wall. Ex Baker: A Source of PDE5 Inhibitors**

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Kaempferia parviflora Wall. ex Baker has been popularly used as male sexual performance enhancer in Thailand. However, its mechanisms were still unknown. One of the possible mechanism for this remedy is phosphodiesterase 5 (PDE5) inhibition. Among 41 plant extracts, the rhizomes of *K. parviflora* ethanolic extract could inhibit PDE5 at 50 µg/ml. Therefore, eight 7-methoxyflavones which are the major the chemical constituents isolated from rhizomes of *K. parviflora* were further investigated on inhibitory activity against PDE5. Moreover, the selectivity of these compounds on PDE5 over PDE6 was evaluated. The results showed that 7-methoxyflavones from this plant showed inhibition effect toward both enzymes. The most potent PDE5 inhibitor was 5,7-dimethoxyflavone (IC₅₀=10.64±2.09 µM, selectivity on PDE5 over PDE6 = 3.71). Structure activity relationship showed that the methoxyl group at C-5 position of 7-methoxyflavones was necessary for PDE5 inhibition. *K. parviflora* rhizome extract and its 7-methoxyflavone constituents had moderate inhibitory activity against PDE5. This finding provides an explanation for enhancing sexual performance in the traditional use of *K. parviflora*. Moreover, 5,7-dimethoxyflavones could be a useful lead compound for clinically efficacious PDE5 inhibitors.

Keywords: *Kaempferia parviflora*, phosphodiesterase5, methoxyflavones, traditional sexual performance enhancer.
