INVESTIGATION OF VASOACTIVE EFFECTS AND POTENTIAL EFFECT MECHANISMS OF *Ficus carica* Linn. SEED FIXED OIL AND ITS MAJOR COMPONENTS WITH ISOLATED ORGAN BATH MODEL

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GRADUATION DATE: 01.08.2025

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THESIS ABSTRACT

This study aimed to investigate the effects of various concentrations of *Ficus carica* Linn. seed fixed oil on vascular smooth muscle contractility in endothelium-intact and endothelium-denuded rat thoracic aortic rings, with a particular focus on the potential involvement of endothelin in these effects. In addition, the roles of the major components of fig seed oil, a-linolenic acid and oleic acid, in the potential vasorelaxant effects were also evaluated.

In conclusion, this study reports for the first time that *F. carica* Linn. seed fixed oil induces vascular smooth muscle relaxation through NO-cGMP and PGI_2-cAMP signaling pathways. Moreover, a-linolenic acid and oleic acid were found to contribute to the vasorelaxant effect of the oil.

APPLICATION AREAS OF THE THESIS RESULTS

According to the *ex vivo* findings obtained, *F. carica* Linn. seed fixed oil may be considered a potential therapeutic agent for cardiovascular diseases such as hypertension and atherosclerosis.

ACADEMIC ACTIVITIES

1. SINAG, I. N., & DEMIREL, S. (2025). Vasorelaxant effects of volatile aromatic compounds on aorta, Oral presentation, 11th Asia Pacific International Congress on Contemporary Scientific Research, 390-98.
2. SINAG, I. N., & DEMIREL, S. (2025). Roles of omega unsaturated fatty acids in smooth muscle contraction-relaxation, Oral presentation, 12th Euroasia International Congress on Applied Sciences, 250-55.
3. Demirel S, Sinag IN. Role of nitric oxide, prostaglandins, thromboxanes and endothelins in lung cancer: An overview. World J Clin Cases 2025;13(25):107907 [DOI: 10.12998/wjcc.v13.i25.107907]

KEY WORDS

- ✓ *Ficus carica* Linn.
- ✓ Fixed oil
- ✓ Vasodilation
- ✓ Endothelium
- ✓ a-Linolenic acid
- ✓ Oleic acid

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