Kidney stone disease affects 12% of the world's population. It is associated with an increasing trend with pathological diseases that impact human health [1]. The lifetime risk of this disease is about 10-15 percent and recurrence rate of 50 percent within 10 years [2]. Kidney stones are formed when the fluid in the urine cannot sufficiently dilute the crystal-forming substances, such as calcium oxalate. Calcium oxalate monohydrate (COM) crystals are a major component in kidney stones comprising 80% of the total calcium stones in the urine. Current treatments for kidney stones disease include surgical options, medical therapy, and natural medication such as taking medicinal herbal plants. *Origanum vulgare* (*O. vulgare*) is a perennial herb from the mint family that is traditionally used to treat certain health conditions including urolithiasis. Its effect on COM was observed through *in vitro* and *in vivo* experiments, and it was then concluded that its extract is qualified enough to be a modifier [3]. Modifiers are any ions, molecules, and proteins that can alter the morphology, surface features, and sizes of the COM crystals by physically blocking solute attachment sites [4]. The extract acts as a modifier in the bulk crystallization studies. This study aims to address the lack of fundamental understanding between the interaction of the *Oregano vulgare* in the treatment of kidney stone diseases.

---


