

Efficacy of Rosemary Essential Compounds to Control Foodborne Pathogens Isolated from Meat: *In silico* and *in vitro* Approach †

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Abstract: Food spoilage is a major issue worldwide, especially meat and meat products, which are easily susceptible to spoilage. Hence there are many artificial food preservatives to prevent spoilage. But these compounds can pose several health complications in the long run. This project’s primary objective is to study the effectiveness of rosemary essential oil as a meat preservative. Since essential oils fall into the category of natural additives due to their plant source, they eliminate the risk of health complications or toxicity. Essential oils are known for their antimicrobial activity, which makes them ideal materials in the food industry. This project will be testing the meat sample and isolating pure bacterial colonies from the sample. We will then study the effectiveness of the essential oil against common bacteria causing spoilage in meat using molecular docking (protein-ligand docking) of the target virulence factors of the bacteria and the active component of the given essential oil.

Keywords: essential oil; natural additive; antimicrobial activity; meat preservation; bacteria; spoilage.

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Conflicts of Interest

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