**Bio-guided chemical characterization and nano-formulation studies of selected edible volatile oils with potentials antibacterial and anti-SARS-CoV-2 activities**

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**Table 1:** Traditional uses and biological activities of the selected plants used in this study.

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| **No.** | **Plant name** | **Traditional uses** | **Biological activities** | **Ref.** |
| 1 | *Pelargonium graveolens* | dysentery, hemorrhoids, inflammation, heavy menstrual flows, and even cancer, diabetes, diarrhea, gallbladder problems, gastric ulcers, liver problems, sterility, and urinary stones | antioxidant, anti-inflammatory, Antibacterial, Antitubercular, Bronchitis, Antifungal, Anticancer, Antiplasmodial, Insecticidal, Antihelmintic | (Amabeoku 2009, Elmann et al., 2010, Kang et al., 2010, Saraswathi et al., 2011, Ben Slima et al., 2013) |
| 2 | *Origanum majorana* | anti-cooling against allergies, fever, flu, hypertension, antipyretic, respiratory infections, antidiabetic, menstrual pain, cold in the uterus, stomach pain, cough, rheumatism, headache, insomnia, and used as an intestinal antispasmodic. | antibacterial property against different pathogenic bacteria such as *Bacillus subtilis*, *Enterococcus faecalis*, *Escherichia coli*, *Klebsiella pneumonia*, *Salmonella choleraensius*, *Serratia* sp., antidiabetic, hepatoprotective, antimutagenic, gastrointestinal effects. | (Bouyahya et al., 2021) |
| 3 | *Syzygium aromaticum* | treatment of burns and wounds, and as a pain reliever in dental care as well as treating tooth infections and toothache, used extensively in perfumes, soaps, as a warming and stimulating agent, treatment of liver, bowel and stomach disorders; and as a stimulant for the nerves, inhibiting food-borne pathogens to treat viruses, worms. | antiviral, antimicrobial, antifungal, anticancer, antioxidant, anti-inflammatory, aphrodisiac, antipyretic, appetizer, hypnotic, anxiolytic, antiemetic, analgesic, decongestant, antimicrobial, antiepileptic, myorelaxant, and expectorant. | (Sarrami et al., 2002, Rapp and Therapy 2004, Bhowmik et al., 2012, Han and Parker 2017, Salim et al., 2017, Batiha et al., 2019) |
| 4 | *Foeniculum vulgare* | treatment of glaucoma, as a diuretic and a potential drug for the treatment of hypertension. It has been used as a galactagogue to improve the milk supply of a breastfeeding mother.  | Antibacterial, antifungal, antioxidant, antithrombotic, anti-inflammatory, oestrogenic, hepatoprotective, antidiabetic, acaricidal, *in vitro* cytoprotection and antitumor activity, anti-hirsutism, and Human liver cytochrome P450 3A4 inhibitory activity. | (Albert-Puleo 1980, Javidnia et al., 2003, Özbek et al., 2003, Choi and Hwang 2004, Lee and chemistry 2004, Mohsenzadeh 2007, Tognolini et al., 2007, Zaidi et al., 2007, Agarwal et al., 2008, Faudale et al., 2008, Pradhan et al., 2008, Pai et al., 2010, Abou El-Soud et al., 2011) |
| 5 | *Carum carvi* | a spice in foods and beverages and as an alternative herbal medicine for GI ailments including dyspepsia, various spasmodic conditions, bloating, diarrhea, flatulent colic, diuretic and expectorant and used for increasing maternal milk, and dysmenorrhea.  | anti-hyperglycemic, anti-hyperlipidemic, hepatoprotective, bronchopulmonary disorders as a cough remedy and demulcent, treatment of gastrointestinal disorders like Helicobacter pylori-induced gastritis, muco-protective on the duodenal peptic ulcer and gastroduodenitis and have an antiulcerogenic effect, antioxidative and antispasmodic. | (Zheng et al., 1992, Phillipson et al., 1994, Sivarajan and Balachandran 1994, Joshi and Joshi 2000, Khayyal et al., 2001, Raphael et al., 2003, Lado et al., 2004, Mahady et al., 2005, Lahlou et al., 2007, Al-Essa et al., 2010, Samojlik et al., 2010, Haidari et al., 2011, Johri 2011, Keshavarz et al., 2013) |
| 6 | *Cinnamomum zeylanicum* | indigestion, cold, cough and microbial infections, a spice in cooking to add flavor, headache, chills, abdominal pain, dysentery, vomiting, cold stomachache, chest tightness, diarrhea, frostbite, and cough, blood circulation disturbances, diabetes, dyspepsia, and gastritis, gastrointestinal neurosis, diarrhea, amenorrhea, dysmenorrhea, impotency | such as anti-inflammatory, antioxidant, and anti-proliferative properties. It is also antibacterial, antifungal, antiviral, antidote, and has properties that prevent hyperglycemia and hyperlipidemia as well as hypertension and atherosclerotic effects | (Lee et al., 2006, Liao et al., 2009, Ngoc et al., 2009, Eswaran et al., 2010, Singh and Jawaid 2012, Zhou and Technology 2016, Abeysekera et al., 2019, Zhou et al., 2019, Singh et al., 2021) |
| 7 | *Eucalyptus globulus* | upper respiratory tract infections, bronchitis symptoms, parasite infections, pruritus brought on by dermatitis, bruises, and sprains.  | antibacterial effects on both Gram-positive and Gram-negative bacteria, as well as antiviral, antifungal, antioxidant, anti-inflammatory, and spasmolytic effects on human rhinoviruses, influenza viruses, and herpes simplex virus type I | (Kowalczyk et al., 2020), (Thosar et al., 2013) |
| 8 | *Laurus nobilis* | treatments for gastro-intestinal complaints including indigestion, constipation, flatulence also as carminative, diarrhea, hemorrhoids, and stomach aches treat kidney diseases, and treatment of cough, colds, influenza, and sore throat, mild sedative and against headaches | antibacterial, antifungal, antioxidant, Cytotoxic, Insecticidal, Nematicidal, inhibit nitric oxide (NO) production, and inhibit microglial activation. | (Barone 1963, Matsuda et al., 2000, Kilic et al., 2004, Ilker et al., 2009, Ivanović et al., 2010, Chen et al., 2014, Alarcόn et al., 2015, Casamassima et al., 2017, Motti et al., 2020, Nafis et al., 2020, Riabov et al., 2020, Anzano et al., 2022) |



**Fig. S1.** Total ion chromatograms (TIC) for gas chromatography-mass spectrometry analyses of *S. aromaticum* essential oil



**Fig. S2.** Total ion chromatograms (TIC) for gas chromatography-mass spectrometry analyses of *C. zeylanicum* essential oil

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