General remarks

1. The solvents used were distilled and dried as per standard laboratory procedures. Other chemical reagents used were analytical grade with minimum purity 99.5%.

2. Column chromatography was performed over flash silica gel (230-400 mesh) make: Merck®.

3. Petroleum ether refers to the fraction collected in the boiling point range 60-80°C.

4. The solvent extracts were evaporated under reduced pressure on Büchi® rotary evaporator R-210. Sodium sulfate anhydrous (Make: Merck®) was used as desiccant.

5. TLC analyses were performed over pre-coated Silica Gel 60 F254 Aluminum plates Merck.

6. All melting points and boiling points were recorded by open capillary method, expressed in centigrade scale and are uncorrected.

7. GC analysis was performed on the instrument Shimadzu GC-2014 equipped with pack column, nitrogen as carrier gas and Flame Ionization Detector.

8. HPLC analysis was carried on Isocratic HPLC LC-6600 with Eurosphere 100-5-C18 250 x 4.6 mm (Knauer®) Serial No. 3195975-WH 9. Detail methods for the analysis on GC and HPLC can be found in appendix.

9. IR spectra were recorded on Shimadzu® FT-IR S8400 instrument and absorptions were expressed in cm\(^{-1}\).

10. UV spectra were recorded on Shimadzu® double beam spectrophotometer UV-1700.

11. The solvent methanol was used for sample preparation unless stated otherwise.

12. \(^1\)H-NMR and \(^{13}\)C-NMR spectra were recorded on a Bruker® AC-200 and Varian Mercury Spectrometer 400 MHz unless stated otherwise using CDCl\(_3\) and CD\(_3\)OD as a solvents, Chemical shifts are given in parts per million (ppm) with respect to internal standard tetramethyl silane (TMS), (\(\delta_H\) 4.78, 3.31 and \(\delta_C\) 49.1 in CD\(_3\)OD) and coupling constant J values are quoted in Hertz. The following abbreviations were used: s = singlet, d = doublet, t = triplet, q = quartet, m = multiplet, bs = broad singlet, dd = doublet of doublet and dt = doublet of triplet HOD (\(\delta_H\) 1.5) peak was ignored from the spectrum in case of hygroscopic compounds.
13. Mass spectra were recorded on Shimadzu® GCMS-QP5050A spectrometer or Agilent® G6540B MS Q-TOF at 70 eV with Electron Spray Ionization technique.

14. The bacterial culture of *Staphylococcus aureus* (Gram Positive) NCIM No. 2079 ATCC No. 6538P and *Proteus vulgaris* (Gram Negative) NCIM No. 2813 ATCC No. 9484 strain were procured from NCIM, National Chemical Laboratory, Pune-08. Nutrient dehydrated powder and agar agar were purchased from Hi-Media®.

15. Scanning Electron Microscope S-4800 Hitachi® instrument was used to analyze the biofilm samples.

16. 2,5-phenyl-1,4-benzoquinone was purchased from Alfa Aesar® and maleic anhydride, citraconic anhydride, phenyl maleic anhydride and cyanuric chloride were purchased from Aldrich®.

17. Eugenol used for the bioactivity was isolated from *Ocimum tenuiflorum* L leaves extract.

**Note:** The compound codes, annotations, scheme and reference numbers given in the abstract and each chapter are refer to that particular abstract and chapter only.