In this study, Origanum hypericifolium that is an endemic species to Turkey was collected from Denizli (a South-Western province of Anatolia) and its essential oil was characterized for its antimicrobial and bioactive properties and volatile composition. p-Cymene that is the precursor of carvacrol was the most abundant constituent observed in the volatile composition while thymol, borneol, and γ-terpinene were the other major compounds. Agar diffusion method was used for determination of antibacterial activity against Escherichia coli O157H7, Salmonella enterica subsp. enterica serotype Typhimurium, Listeria monocytogenes and Staphylococcus aureus. E. coli O157:H7 was found to be the most susceptible species to the essential oil with the 15.5 mm inhibition zone. Bioactive properties of O. hypericifolium essential oil were much higher (P<0.05) than the hydrosol. Total phenolic content, DPPH scavenging activity and total antioxidant activity of the essential oil were measured as 104.928 mg GAE/g, 38.95% and 9.979 mg TA/mL respectively. In conclusion, this study highlighted that O. hypericifolium had a good potential with its high antimicrobial and bioactive properties to be used as a strong phytochemical agent in pharmaceutical and food industry. Therefore, its cultivation and production should be improved. Keywords: Origanum hypericifolium, essential oil, bioactive, antimicrobial, endemic.