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 O157:H7, 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.