Phytochemical Characterization of Punica Granatum Peel and its Antimicrobial Potency

Yahya Alemin Salih Alemin
Sudan University of Science and Technology, Sudan

Sudan is the worldwide country in Africa with a diverse flora. Most of the Sudanese people, rural areas, rely on traditional medicine for the treatment of many infection diseases. It has been determined that various natural substances are effective to act as antibacterial agents. Secondary metabolites such as alkaloids, flavonoids, tannins, terpenoids have been seen to have antimicrobial activities. Punica granatum L., (pomegranate) belongs to the family punicaceae which include only one genus and two species. The pomegranate is one of the oldest known edible fruits. It is history dates to very ancient times. This fruit tree is one of the species mentioned in the Bible and Quran and it’s often associated to fertility. It is native to Iran and northeast turkey and has been cultivated through the Middle East, Southern Asia and Mediterranean region for several millennia. It is known that plants synthesize a vast range of organic compounds that are traditionally classified as primary and secondary metabolites. Primary metabolites are the compounds that have vital roles linked to photosynthesis, respiration, and growth and development. Although ignored for long, their function in plants is now attracting attention as some appear to have a key role in protecting plants from herbivores and microbial infection, as attractants for pollinators and seed-dispersing animals, as allopatic agents, UV protectants and signal molecules in the formation of nitrogen-fixing root nodules in legumes. Alkaloids are the substances which are produced by microbes such as bacteria, fungi and also by plants and animals. They are well known for their pharmacological effects and therefore are used as medicines as recreational drugs. Saponins are bioactive compounds produced mainly by plants, but also by some marine organisms and insects. Chemically, they generally occur as glycosides of steroids or poly cyclic tri terpenes. Saponins have various benefits as they can be used as anti-tumor, anti-insect, anti-inflammatory effects. Tannins, mostly used in Asia, have natural healing aspects. They are mostly used as astringents for treating diarrhoea. The present study was designed to characterize the phytochemical and antibacterial activity of punica granatum peel extracts (Aqueous-Ethanol and Acetone) against standard bacteria strains Gram positive Staphylococcus aureus and Gram negative Escherichia coli, Pseudomonas aeruginosa using disc diffusion method. However, the objectives of this research involved are investigation of phytochemical characteristics of Punica granatum peel extracts, preparation of aqueous, acetone extracts and study of antimicrobial activity of the peel extracts against some gram positive and gram negative microbes.