

Human beings have always involved themselves in various activities to ensure their wellbeing and survival. The level of reactive species in the cellular system may be reduced by antioxidants either by restricting the expression or activities of free radical-producing enzymes such as xanthine oxidase (XO) and NAD(P)H oxidase, or by enhancing the expression and activities of antioxidant enzymes such as glutathione peroxidase (GPx), catalase (CAT), and superoxide dismutase (SOD) (Aziz et al., 2019). At lower concentrations, they have beneficial effects and indulged in different physiological processes such as redox regulation, mitogenic responses, cellular signaling pathways, and an immune function while at a higher level, these reactive species generate nitrosative and oxidative stress (Phaniendra et al., 2015). To reduce or prevent free radical-directed oxidative damage, the human body has developed an antioxidant defence mechanism that involves free radical scavenging, metal chelating, and enzymatic activities to neutralize the reactive species just after they have formed. The reactive nitrogen and oxygen species (RNS/ROS) play a twofold role as both toxic and beneficial compounds to the organism's system. The growing interest in antioxidants among the public, health professionals, and food scientists is due to their protective function in food items against oxidative deterioration and the organism body against oxidative stress-directed abnormal processes. These potent natural antioxidants are in huge demand for pharmaceuticals/nutraceuticals and as food preservatives.