Oxidative stress, which is a factor in the aging process and in a series of serious disorders, arises when the reactive oxygen or nitrogen species are produced in excess and the capacity of cellular antioxidant defense is insufficient to detoxify and remove them. An internal antioxidant system is not always active enough to protect the human body from oxidative stress and, therefore, it needs the help of either synthetic or natural antioxidants. Nowadays, there is a growing interest in the substitution of synthetic antioxidants, which could have toxic and mutagen effects, with natural antioxidants. Recent studies revealed that besides their high nutritional value, mushrooms have great potential as antioxidant agents. Species of the genus Ganoderma, especially G. lucidum, are well-known medicinal mushrooms that traditionally are used in the prevention and treatment of many diseases and possess appreciable antioxidant potential.