

## Determination and Investigation of the Antioxidant Activity of Novel Indole-Triazole Derivatives

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It is well known that the reactive oxygen species (ROS) are responsible for cell damage and are involved in many pathophysiological conditions. Many diseases such as anemia, uremia, myocardial infarction, atherosclerosis, neurological disorders like Parkinson's disease, cancer, acute and chronic inflammations, are related to free radicals and to lipid peroxidation. Recently a new research field is developing concerning the design of highly selective drugs with antioxidant activity. In this aspect the establishment of the structural requirements which enable the compounds to combine the antioxidant ability with their target pharmacological activity is being explored. Five-membered heterocyclic triazoles are known to exert anti-inflammatory, antiviral and antimicrobial properties. On the other hand, the indole nucleus has been related to a number of biological activities, such as anti-allergic, antimicrobial and recently to antilipidemic and anti-ischemic activities. In the light of the above con-

siderations a series of novel derivatives were synthesized, which combine both the triazole and indole nucleus in one frame. Moreover the presence of a sulphhydrylic group in the molecules constitutes an additional structural feature which favors a potential action against the formation of free radicals. The ability of the compounds to scavenge free radicals has been investigated by the determination of the interaction with 1,1-diphenyl-2-picrylhydrazyl (DPPH) stable free radical. The ability of the compounds to scavenge OH radicals has also been established by the determination of their competition with dimethylsulphoxide (DMSO) for OH radicals. We found that the compounds possess strong antioxidant ability and are potent free radicals and OH scavengers, as they inhibit substantially DMSO oxidation. We postulate that the antioxidant properties of the compounds under study depend on certain structural characteristics.