N-Substituted Indole-3-imine Derivatives and their Amine Congeners: Antioxidant and Src Kinase Inhibitory Effects

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Current evidences demonstrated that the activity of protein kinases can be controlled through oxidative stress induced by reactive oxygen species (ROS) and normalized by antioxidants. Recent studies with ROS, generated by mitochondria, suggested the potential signalling role of these species, where ROS, especially hydrogen peroxide, were proposed as membrane-related signalling components. The protein regulation by cellular redox states has shown that protein tyrosine kinase members, such as Src kinase and some of the members of the Src family kinases (SFKs), are proteins regulated by the cellular oxidation and reduction status. In this context, the oxidant or antioxidant potential of the synthetic Src kinase inhibitors previously synthesized and studied by our research group, such as *N*-substituted indole-3-imine and -amine derivatives, were investigated employing various acellular *in vitro* methods including microsomal NADPH-dependent inhibition of lipid peroxidation (LP), interaction of 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical and scavenging of superoxide anion radicals. Here, we report that some of the synthetic inhibitors designed for Src kinase target have both antioxidant and kinase inhibition properties.

Key words: Reactive Oxygen Species, Tyrosine Kinase Inhibitors, *N*-Substituted Indole-3-imine and -amine Derivatives, Antioxidant Properties