

Epicatechin Metabolites and Its Effect on ROS Production in Bovine Aortic Endothelial Cells

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Abstract : The action of (-)-epicatechin, a cocoa (*Theobroma cacao*) flavanol that modulates redox/oxidative stress are contributed mainly to their antioxidant properties. The present study investigates the concentration and time dependent effect of (-)-epicatechin metabolites 3MeEc, 4MeEc, and 4SulEc on the production of ROS on BAEC using L-012, Lucigenin as chemiluminescence dye and XO/HX system. Our result demonstrates that 3MeEc shows significant ($P < 0.05$) lowering effect of ROS production in BAEC with increasing concentration of metabolite while L-012 was used as chemiluminescence dye but not in the case of Lucigenin. In XO/HX system, using L-012 as chemiluminescence dye, 3MeEc and 4MeEc showed significant lowering effect on ROS production with increasing concentration from 100-500nM as compared to the positive control (SOD). When Lucigenin was used as chemiluminescence dye, 3MeEc exerted significant lowering effect with increasing concentration when compared to the positive control (SOD) whereas 4MeEc showed significant lowering effect in ROS production from 250 nM on as compared to positive control. For 4SulEc, a significant lowering effect of ROS production was only observed at 100 and 250 nM. Overall, although each metabolite shows considerable effect, 3MeEc exhibited more pronounced effect on decreasing the production of ROS as compared to other two metabolites.

Keywords : epicatechin metabolites, HO-1, Nrf2, ROS

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