Thesis Title	Antiformation of Toxic Compound by some Antioxidants: Mutagenicity of 1-Aminopyrene Treated with Nitrite and Occurrence of N-nitrosomorpholine
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ABSTRACT

The antioxidants butylated hydroxyanisole (BHA, 0.04 - 2.0 mg/ml), butylated hydroxytoluene (BHT, 0.04 - 40 mg/ml), β-carotene (cold water soluble powder, 2 - 16 mg/ml), α-tocopherol (0.04 - 80 mg/ml emulsified with lecithin) and ascorbic acid (35 - 140 mg/ml) were investigated for their effects on the reaction mixture of 1-aminopyrene (0.0138 mM) and nitrite (0.5 M) in gastric liked condition using the Ames test in the absence of metabolic activation as an index. Their inhibitory effect on nitrosomorpholine formation was also evaluated. The results showed that BHA, BHT and ascorbic acid could interact with nitrite to form mutagenic compounds. It was also revealed that the products of nitrite treated BHA and BHT were synergists for the direct mutagenic activity of nitrite treated 1-aminopyrene. The possibilities of such results may explain by two mechanism 1) the new compound from the interaction of each antioxidant and nitrite acted as synergist for the formation of the product of nitrite treated 1-aminopyrene or 2) the

new compounds or the antioxidants themselves had an enhancing effect on the tester bacterial nitroreductase. β-Carotene was also a good antimutagenic for the reaction model. It possible action should be on the nitroreductase of the tester strain. α-Tocopherol expressed its antimutagenic in the same manner as of β-carotene; however, its data was fluctuate to obtain a conclusive result. Ascorbic acid was the only antioxidant expressed its inhibitory effects on N-nitrosomorpholine formation. However, it was suggested that the inhibition of nitroso compound formation of ascorbic has no relationship with mutagenicity of the studied model.