ABSTRACT

Commercial chicken extracts; six plain extracts, one extract with fortified with tangkwei (Angelica acutiloba), one extract fortified with shiitake mushroom (Lentinus edodeo), one extract fortified with ginseng (Panax ginseng), two extracts fortified with cordyceps (Cordyceps chinensis) as well as one home made extract were lyophilized and were interacted with sodium nitrite (500 mM) in the acid condition (pH 3.0-3.5) at 37°C for 4 hours. Each treated sample was investigated on its mutagenic potential using the pre-incubation method of Ames test without metabolic activation. Original samples without nitrite treatment were not mutagenic. Nitrite treated products of three samples converted both *Salmonella typhimurium* strains TA 98 and TA 100 to be histidine independent but those of nine samples showed mutagenicity only to TA 98. The range of specific mutagenicity (revertants/ml original sample) was 2,268-17,202 on TA 98 (frameshift mutation type) and 5,372-10,270 on TA 100 (base-pair substitution type). However, there was no beneficial effect on the addition of medicinal plants to the chicken extracts in term of antiformation of mutagenic products during nitrite treatment. All nitrosated samples also contained N-nitroso compound (Calculated as N-nitroso morpholine equivalent, NMOR) with no correlation with the mutagenicity. The range was between 0.50-3.01 μg-mole/ml of original sample. The consumption of such chicken extract in the presence of nitrite (possibly from fermented meat products) should be avoid in order to reduce the risk of exposure to in vivo formed mutagenic compounds.