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## Preparation of Conjugated Linoleic Acid Derivatives with Ascorbate

Kwan Ju Jung, Young Suk Kim, Wook Jin Jang, Mi Jeong Jo,  
Min Suck Kim, Jeong Ok Kim<sup>1</sup>, Hong Chul Kim<sup>2</sup>,  
Eun Ju Lee<sup>3</sup> and Yeong Lae Ha.

Division of Applied Life Sciences and Institute of Agricultural Life Sciences, Graduate School, Gyeongsang National University, Jinju, 660-701, Korea,

<sup>1</sup>HK Biotech Co., Ltd., Jinju 660-972, Korea

<sup>2</sup>Dept. of Microbiological Engineering, Jinju National University, Jinju 660-758, Korea

<sup>3</sup>Korea Food & Drug Administration, 122-704, Korea

Conjugated linoleic acid (CLA) is a lipophilic and a limitation to use in food systems. Ascorbic acid is known to be the most effective water soluble dietary antioxidant. To improve solubility and oxidative stability of CLA, we prepared CLA derivative with Ascorbic acid. Ascorbate ester of CLA (CLA-Asc) was synthesized by chemical method of reacting CLA-Cl with 5,6,-O-isopropylidene- L-ascorbic acid. CLA-Asc was purified by silica gel column chromatography and TLC and its structure was confirmed by IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, and GC.

Some biological activities of conjugated linoleic acid derivatives with ascorbate (CLA-Asc) were determined *in vivo* and *in vitro* systems. The antimutagenic activity of CLA-ASC against IQ, MeIQ, and AFB<sub>1</sub> were a quite dependent on the mutagens used. CLA-ASC was anticarcinogenic for mouse ascites cancer induced by S-180 cells. Mouse liver microsome treated with CLA-Asc was resistant to oxidation induced by NADPH/Fe<sup>++</sup> or Asc/Fe<sup>++</sup>, but not CuOOH or AAIN. Mouse body weight reduction was overcome by CLA-Asc as compared to CLA. These results suggest that CLA-ASC exhibited the enhanced preventive cancer activity and was prepared to enhance water solubility of CLA in foods.