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제 목	Development of *in vitro* Short-term Carcinogenicity Test Method and its Mechanism of Action
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내 용 Abstract - In order to develope the *in vitro* short term screening method for carcinogen, we studied a purification method for thymine glycol in oxidaized DNA. Thymine glycol(5,6-dihydroxy-5,6-dihydrothymine) is the major stable radiolysis product in thymine by chemical oxidants and ionzing radiation and it is a useful biomarker among oxidized DNA adducts, related with carcinogenesis. Standard thymine glycol was prepared by oxidation of [^{3}H] thymine with $KMnO_4$ followed by purification with HPLC-LSC system and it was assayed by TLC and gas chromatography-MSD. [^{3}H] DNA adducts was isolated from *E. coli* (wild type) treated with oxidative agents such as benzo(a)pyrene, adriamycin, aflatoxin B_1 and $KBrO_3$. These oxidative agents generated free radicals in cells by oxidative metabolism. As a result, thymine glycol was produced in cultured *E. coli* by four chemicals. This result shows that this methodology should be useful tool in screening oxidative carcinogen.

keywords : thymine glycol, DNA adducts, carcinogenesis, HPLC-LSC system