

Toxicogenomic Analysis of Genotoxicity in Escherichia Coli

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Genotoxicity is important for characterizing the mode of action for carcinogens, including bladder carcinogens. Here, we tried to evaluate genotoxicity using E. coli DNA microarray. Toxicogenomic assessments involve the screening of genes (numbering from one to thousands) for changes in expression patterns in response to treatment with a test material. And also, toxicogenomic studies should not be interpreted without appreciating the importance of dose, timing, and the multiplicity of modulating responses provoked in the test system by the toxic insult. Therefore, we employed this concept, we tested sublethal, LC20 and LC50 as different dose, 5 min, 25 min, 45 min and 65 min for time course evaluation and last thing, three different DNA damage chemical, mitomycin C (MMC), 1-methyl-1-nitroso-N-methylguanidine (MNNG), Nalidixic acid (NDA) as a genotoxicity model chemical. Consequently, we can screen the commonly expression genes as a genotoxicity biomarker even though it needs further study. Total Gene expression profiles were represented by clustering analysis, functional classification and gene-chemical network.