



DIFFERENT RESPONSES OF *E. COLI* AB1157 STRAINS BEARING
Tn10, Tn10KAN AND Tn9 TRANSPOSONS AFTER HALOGEN
LIGHT AND UV LIGHT IRRADIATION

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Uncovered halogen lamps are efficient sources of far and near UV radiation including UVC (190-280 nm), UVB (280-320 nm), and UVA (320-400 nm). Recently we have shown that the induction of mutations, the mutational specificity and the MFD effect observed after halogen light irradiation in *Escherichia coli* K-12 AB1157 strain have the same characteristic features as those seen in *Escherichia coli* B strains after irradiation with 254 nm UV light, [Mutation Research 390 (1997) 85-92].

The Tn10 and Tn10kan transposons are commonly used as a tool for construction of various bacterial mutants. However, we have found that introduction of the Tn10 and Tn10kan transposons to AB1157 strains makes bacteria more sensitive to, and less mutable by halogen light and UV light irradiation.

Both these phenomena are observed regardless of the transposon location on the chromosom. We have tested five *E. coli* AB1157 strains bearing Tn10tet transposons placed in: 2 min (*leu::Tn10*), 25 min (*zcf117::Tn10*), 58 min (*src::Tn10*), 64 min (near *enda*) and 92 min (*malE::Tn10*); and one Tn10kan transposon placed in 14.5 min (*zbd3104::Tn10kan*) on the linkage map.

Increased sensitivity and decreased mutability after halogen light irradiation seem to be independent on tetracycline resistance proteins production since they appear regardless of the presence of antibiotic in media and these effects are the same when tetracycline resistance was replaced by kanamycine resistance.

Our results point that the effects caused by the Tn10 transposons are *umuDC* dependent since (i) they are suppressed when bacteria are transformed with plasmid pGW2123, pGW2101, pGW2122 and pGW2020 carrying *umuD'*C; *umuDC*, *umuD'* and *umuD*, respectively (ii) they are not observed in the strain in which the *umuDC* operon was deleted and (iii) there is no difference in the level of *umuDC*-independent mutations induced by ethyl methanesulfonate in AB1157 strains bearing or not the Tn10 transposons.

The phenomena which occur after halogen light irradiation in AB1157 strains carrying Tn10 transposons are not observed in strains with the Tn9 transposon (*malB::Tn9*).