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THE EFFECT OF THE recA ALLELE IN THE COMPLEMENTATION OF DEFECTIVE BACTERIOPHAGE INDUCTION IN Escherichia coli RecA- MUTANTS PROMOTED BY THE CLONED T4 BACTERIOPHAGE UvsX PROTEIN

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The UvsX protein of T4 bacteriophage is similar in structure and function to the RecA protein of E. coli. Published research has shown that the UvsX protein promotes recombination but not RecA-LexA mediated DNA repair nor an analogous process, the induction of lysogenized bacteriophage. Upon further research, we have discovered that the UvsX protein produced from the cloned gene in medium copy number promotes bacteriophage induction under certain circumstances. Consistent with previous studies, the UvsX protein has been shown to be unable to promote bacteriophage induction in the E. coli RecA- mutant DH5α. However, in contrast to these studies, complementation of defective bacteriophage induction has been successful in a different RecA- mutant strain, HB101. This data suggests that complementation of defective bacteriophage induction in E. coli RecA- strains is dependent on the recA gene allele.