# FREQUENCY OF EXCHANGES PROMOTED BY CONJUGATIONAL RECOMBINATION IN ESCHERICHIA COLI K-12

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Genetic analysis, based on the Haldane formula was used for quantitative characterization of frequency of recombination exchanges per unit length of DNA (FREULD) via[a] parameter $\lambda$ which is a mean distance between the two neighbouring crossovers. The effect of different coprotease constitutive recA mutants on

increase of FREULD can be described by order: **recA1211 (recA730)** > recA1212 > recA1202, 1219, 1235 > recA1222 > $recA^+$. No correlation between the degree of constitutivity and the FREULD enhancement was observed. One of two Srf (suppressor of recF) recA mutants analyzed showed a slight increase (recA803) whereas the other (recA801) showed the two fold decrease of FREULD. The dramatic increase of FREULD in fully SOS derepressed recipients **lexA71::Tn5 recA730** results from a synergistic effect of both **lexA71** (SOS derepression) and **recA730** mutations. The effect of **recA730** appeared to be dependent on the integrity of SOS system. It seems resonable that FREULD is defined by intrinsic properties both of the RecA protein and some proteins of SOS cell system.

Summarizing these and literature data we present the scale of relative changes of FREULD. It reveals the two extreme physiological states of conjugational merozygotes, with mutant genotypes **lexA71 recA730** and **recF504 recAQ61**, that show the 300 fold difference in FREULD values.