

Enhanced production of 1,5-diaminopentane production by expression of *Deinococcus radiodurans* response regulator *DR1558* gene in recombinant *Corynebacterium glutamicum*

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Previous studies have shown that the *DR1558* gene from *Deinococcus radiodurans*, it can regulate multistress if introduced into a strain. In this study, the *DR1558* was introduced into the engineered strain to confirm the improved production of 1,5-diaminopentane. To express *DR1558* in an engineered *Corynebacterium glutamicum* KCTC 1857 *IdcC* strain, *DR1558* was integrated in to the strain by gene cloning and controlling its expression with a strong synthetic H30 promoter. A control strain was used in which strain *DR1558* was not introduced. Recombinant and wild-type strains were compared by qRT-pcr for expression levels of genes in the central pathway. The strain inserted with the *DR1558* gene showed more 1,5-diaminopentane production and stable cell growth, and After 48 hours of incubation, the residual lysine was found to be smaller than wild type strain. As a result, we have shown that *DR1558* gene can be expressed as a stress-regulated gene in the engineered-strain to produce more targeted products.