

**Comparison of effect in overexpression and integration of
ccaR, *cas2* on chromosome of *Streptomyces clavuligerus*
NRRL3585**

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Abstract

We have constructed the expression plasmids as well as integration plasmids with *ccaR* and *cas2* target genes. The production of Clavulanic acid (CA) was compared from *Streptomyces clavuligerus* NRRL 3585 after transformation of the expression and integration plasmids. Overexpression plasmids pIBRHL1 (*ccaR*), pIBRHL3 (*cas2*) and pIBRHL13 (*ccaR*& *cas2*) increases the productivity by 2.25 fold, 5.06 fold and 5.79 fold while integration plasmids pNQ3 (*ccaR*) and pNQ2 (*cas2*) increases by 9.4 fold and 3.0 fold respectively as compared to that of wild-type. The combination of *ccaR* and *cas2* resulted in the higher amount of CA than any single expression gene. So, each gene has crucial role in enhancing CA production.

Keywords : Clavulanic acid; Plasmids; Overexpression; *Streptomyces clavuligerus*