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Review of Strategies for the Industrial Production of α-amylase by *Bacillus subtilis*

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Abstract: *Bacillus subtilis can secrete industrially important proteins such as proteases and α-amylases and used on industrial scale. α-Amylase enzyme has market demands due to its applications in food, bakery, detergent industries, starch liquefaction, pre-digestion of the animal feed to enhance its quality, sizing of the fibres in textiles. The safety issues associated with the use of this bacteria for industrial applications are studied and it has been observed that the products obtained from it are having GRAS status of US Food and Drug Administration. Bacillus subtilis is considered the most widely experimental organism to conduct the genetic modification studies due to its properties which make it a suitable host for biosynthesis of the products. The genomic structure of Bacillus subtilis can be modified with the help of high quality genomic sequences. The genetic strategies for such modifications include the use of mutagenic treatments, screening of better expression systems, use of better promoters and high secretion level peptides. Another aspect of these strategies to enhance the enzyme yield includes the application of different fermentation methods and use of different substrates. Present review article summarizes some of such strategies applied for obtaining higher yields of α-amylase enzyme using Bacillus subtilis.*

Keywords: Bacillus Subtilis, α-amylase, Fermentation, Genetic Modification, Screening, Enzyme Production.

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