JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

The gene profiling of Polyhydroxybutyrate producer *Bacillus Subtilis Subsp.Subtilis DJ9192*.

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ABSTRACT

The *Bacillus Subtilis Subsp.Subtilis* DJ9192 is a one of the potent producer of granules which can be use as an alternative to synthetic plastic.The sequence of genome of *Bacillus Subtilis Subsp.Subtilis* DJ9192 made up of numerous genes which responsible for production of other metabolic pathways including this..The organism contains the 3738 proteins which The CDSs made up of different 4262 gene product

INTRODUCTION

As the *Bacillus Subtilis Subsp.Subtilis DJ9192* carries the capacity to produce Polyhydroxybutyrate which has been shown as a enough proof in Bio-Physico Characterization of Poly-3-Hydroxybutyrate (PHB) Produced from an Organic Pollutant Utilizer *Bacillus subtilis subsp.subtilis* DJ9192 (1).The bio-physico characterization of paper also shows the various instrument based authenticity to proof that PHB can work as an alternative to synthetic plastic (2).This paper has used gene profile of potent PHB producer bacteria to have applications as bioplastics

METHODOLOGY

The Bacillus subtilis subsp. subtilis whole genome shotgun (WGS) project has the project accession JACVER000000000. This version of the project (01) has the accession number JACVER010000000, and consists of sequences JACVER010000001-JACVER010000008.

The annotation was added by the NCBI Prokaryotic Genome Annotation Pipeline (PGAP). Information about PGAP can be found here: https://www.ncbi.nlm.nih.gov/genome/annotation_prok/

RESULTS

Annotation Provider	: NCBI
Annotation Date	: 09/04/2020 17:48:49
Annotation Pipeline	: NCBI Prokaryotic Genome Annotation Pipeline (PGAP)
Annotation Method	: Best-placed reference protein set; GeneMarkS-2+
Annotation Software revision	: 4.12

Features Annotated : Gene; CDS; rRNA; tRNA; ncRNA; repeat_region

Genes (total) : 4,326

CDSs (total) : 4,262

Genes (coding) : 3,738

CDSs (with protein) : 3,738

Genes (RNA) : 64

rRNAs : 2, 2 (5S, 16S)

complete rRNAs : 2 (5S)

partial rRNAs : 2 (16S)

tRNAs : 55

ncRNAs : 5

Pseudo Genes (total) : 524

CDSs (without protein) : 524

Pseudo Genes (ambiguous residues): 0 of 524

Pseudo Genes (frameshifted) : 469 of 524

Pseudo Genes (incomplete) : 53 of 524

Pseudo Genes (internal stop) : 21 of 524

Pseudo Genes (multiple problems) : 19 of 524

##Genome-Annotation-Data-END##

##Genome-Assembly-Data-START##

Assembly Date : 05-SEP-2017

Assembly Method : GS De Novo Assembler v. 2.6

Genome Representation: Full

Expected Final Version : Yes

Genome Coverage : 40.27x

Sequencing Technology: IonTorrent

##Genome-Assembly-Data-END##

The reference link is JACVER000000000.1 Bacillus subtilis subsp. subtilis :: NCBI

CONCLUSION

The whole genome sequence of *Bacillus Subtilis Subsp.Subtilis DJ9192* made up of 8 contigs.The organism contains the 3738 proteins which contains 4,240,940 bp of nucleotide sequences.The CDSs found in DNA sequences is 4262 proteins.which shows the results of potential producer of PHB which can be use as an alternative to synthetic plastic.The whole genome also shows the gene expression of PHB producing gene which indicates the future endeavours in the field of bioremediation.

REFERENCES

1) Jadeja, D. A., Nathani, N. M., Mootapally, C., & Kothari, R. K. (2023). Bio-Physico Characterization of Poly-3-Hydroxybutyrate (PHB) Produced from an Organic Pollutant Utilizer Bacillus subtilis subsp. subtilis DJ9192. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*, *93*(2), 489-497.

2) Mohanrasu, K., Rao, R. G. R., Dinesh, G. H., Zhang, K., Sudhakar, M., Pugazhendhi, A., ... & Arun, A. (2021). Production and characterization of biodegradable polyhydroxybutyrate by Micrococcus luteus isolated from marine environment. International Journal of Biological Macromolecules, 186, 125-134.

3) JACVER000000000.1 Bacillus subtilis subsp. subtilis :: NCBI