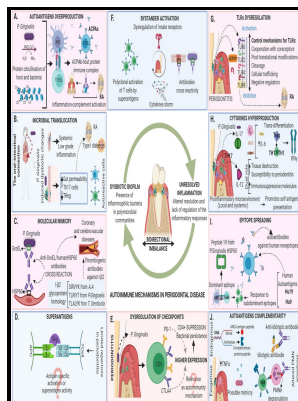


# Overproduction of microbial products

Academic Press - Microbial Production : From Genome Design to Cell Engineering (2014, Hardcover) for sale online



Description: -

- Microbial metabolites. Overproduction of microbial products

- FEMS symposium -- no. 13 Overproduction of microbial products

Notes: Includes bibliographies and index.

This edition was published in 1982



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## Improvement of microbial strains and fermentation processes

Abbreviations of chemicals are G3P, glyceraldehyde 3-phosphate; DXP, 1-deoxy-D-xylulose-5-phosphate; IPP, isopentenyl pyrophosphate; DMAPP, dimethylallyl pyrophosphate; FPP, farnesyl pyrophosphate; L-Tyr, L-tyrosine; PEP, phosphoenolpyruvate;  $\alpha$ -KG, 2-oxoglutarate; OAA, oxalacetate; OA, oleic acid; LA, linoleic acid; ALA, -linolenic acid; EPA, eicosapentaenoic acid Polyphenolic compounds including flavonoids, isoflavonoids and stilbenoids are secondary metabolites typically in plants that protect against stress conditions such as ultraviolet radiation, pathogenic infection and physical damage. *Rhizopus oryzae* Increased clear zone around colony Lactate 10.

## Metabolic engineering of microbial cell factories for production of nutraceuticals

QUINOLONES: Antibacterial compounds interfere with bacterial DNA gyrase, prevent supercoiling packaging of DNA eg Flouroquinolones like ciprofloxacin UTI, anthrax. The same research group also introduced a cytochrome P450 flavonoid monooxygenase FMO, which was fused in-frame to the cytochrome P450 reductase CPR from *C.*

## Improvement of microbial strains and fermentation processes

To this end, the fine-tune expression of enzymes native enzymes for increasing supply of geranylgeranyl diphosphate GGPP precursor as well as exogenous enzymes carRP and carB from *Mucor circinelloides* for conversion of GGPP into  $\beta$ -carotene using strong promoters and sequential multiple-copy integration led to a strain of *Y.* Although single cells or spores are preferred for mutagenesis, non-spore-forming filamentous organisms have been mutated successfully by mutagenizing mycelia, preparing protoplasts and regenerating on solid medium.

## Overproduction of microbial lipids and lipases

The recombinant strain contains two metabolic pathways, one for conversion of glucose to glycerol and the other for conversion of glycerol to 1,3-propanediol ;.

## Microbial engineering for the production of advanced biofuels

The strategies for the development of ORN producers are similar to those employed for ARG producers except auxotrophy rescue by supplements is additionally used.

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