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STN Database Summary Sheet

BIOENG (Biotechnology and BIOENGINEERING Abstracts) is a bibliographic database providing access to international research on all aspects of biochemical and microbial technology as applied to bioengineering. Information is drawn from journals, conference proceedings, directories, and other sources, including Engineering Information's comprehensive engineering database.

Subject Coverage

- Biochemistry
- Biology
- Biological materials
- Biomaterials
- Biomechanics and human engineering
- Biomedical engineering
- Biomedical equipment
- Biotechnology
- Genetic engineering
- Health care
- Hospital and dental equipment and supplies
- Prosthetics
- Rehabilitation engineering

Sources

- Journals
- Books
- Conference proceedings
- Patents

File Data

- 1982 to the present
- More than 468,745 records (07/04)
- Updated monthly
- Automatic current-awareness searches (SDIs) are run monthly

User Aids

- STNGUIDE
- Online Helps (HELP DIRECTORY lists all help messages available)

Database Producer

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Search and Display Field Codes

The field that allows left truncation (/BI) is indicated by an asterisk (*).

Search Field Name	Search Code	Search Examples	Display Codes
Basic Index * (contains single words from the abstract (AB), classification code (CC), controlled term (CT), title (TI), and uncontrolled term (UT) fields)	None or /BI	S EXPERIMENTAL STUDY S HIGH(L)ACCELERATION S ?PRODUCTION?	AB, CC, CT, TI, UT
Abstract	/AB	S ENZYME STABILITY/AB	AB
Accession Number	/AN	S 2004000021/AN	AN
Author	/AU	S SMITH ?/AU S SMITH, AD/AU	AU
Classification Code (1) (code and text)	/CC	S 01002/CC S PEPTIDES PROTEINS/CC	CC
Controlled Term	/CT	S MANAGEMENT SCIENCE/CT	CT
Controlled Word	/CW	S PROTEIN/CW	CT
Corporate Source (1) (including author's affiliation)	/CS	S TECHNICAL RESEARCH CENTRE/CS	CS
Data Entry Date	/DED	S DED=JAN 1998	DED
Document Number	/DN	S 1014834/DN	DN
Document Type (code and text)	/DT (/TC)	S BOOK/DT S B/DT	DT
E-mail Address (1)	/EML	S CUSTSERV@WILEY.COM/EML	EML, SO
Entry Date (2)	/ED	S ED=20040609	UP
Field Availability	/FA	S AB/FA	Not displayed
International Standard (Document) Number	/ISN	S 0945-0084/ISN	ISN, SO
Journal Title (includes abbreviated and full titles)	/JT	S "ABB REV"/JT	SO, JT
Language (ISO code and text)	/LA	S L1 NOT ENGLISH/LA	LA
Note (1)	/NTE	S SYSTEMS/NTE	NTE
Number of Report	/NR	S DOE/BC/10302-46/NR	NR
Other Source	/OS	S POLLUTION ABSTRACTS/OS	OS
Patent Country (1)	/PC	S US/PC S UNITED STATES/PC	PI
Patent Number (3)	/PN (PATS)	S US5561056/PN	PI
Publication Date (2)	/PD	S JAN 2001-MAY 2001/PD	PD, SO
Publication Year (2)	/PY	S PY>=1999	PY, SO
Publisher (1)	/PB	S SPRINGER VERLAG/PB	PB
Source (contains journal titles, other higher level titles, publisher and place of publication, meeting information, collation information (volume, issue, pages), ISSN, ISBN, publication year, URL, and e-mail addresses)	/SO	S EUROPEAN AEROSOL CONFERENCE/SO S ELSEVIER/SO AND OXFORD/SO S MATERIALS/SO AND 230/SO	SO
Summary Language (ISO code and text)	/SL	S L2 NOT FRENCH/SL	SL
Title	/TI	S LACTIC ACID/TI	TI
Uniform Resource Locator (1)	/URL	S ELSEVIER/URL	URL, SO
Update Date (2)	/UP (ED)	S UP=JUN 2004	UP
Word Count, Title (2)	/WC.T	S WC.T<10 AND 11	WC.T

(1) Search with implied (S) proximity is available in this field.

(2) Numeric search field that may be searched using numeric operators or ranges.

(3) Numbers are searchable in STN and Derwent formats.

DISPLAY and PRINT Formats

Any combination of display fields and formats may be used to display or print answers. Multiple codes must be separated by commas or spaces, e.g., D L1 1-5 TI AU. The fields are displayed or printed in the order requested.

Hit-term highlighting is available for all fields except PY. Highlighting must be ON during SEARCH in order to use the HIT, KWIC, and OCC formats.

Format	Content	Examples
AB AN AU CC CS CT DED (1) DN DT (TC) EML (1) ISN (1) JT (1) JTA (1) JTF (1) LA NR NTE OS PB (1) PD (1) PI PY (1) SL SO TI UP (ED) (1) URL UT WC.T	Abstract Accession Number Author Classification Code Corporate Source Controlled Term Data Entry Date Document Number Document Type E-mail Address International Standard (Document) Number Journal Title Journal Title, Abbreviated Journal Title, Full Language Number of Report Note Other Source Publisher Publication Date Patent Information Publication Year Summary Language Source Title Update Date Uniform Resource Locator Uncontrolled Term Word Count, Title	D TI AB 1-10 D AN D AU 1-2 D CC D CS D CT D DED D DN D DT D EML D ISN D 1-10 JT L7 D JTA L7 D JTF L7 D L8 LA 1-3 D NR D NTE D OS D PB D PD D PI D PY D SL 2 D SO D TI 1-3 D UP D URL D UT D WC.T
ABS ALL BIB (default) DALL IALL IBIB IND SCAN (2) TRIAL (TRI, SAMPLE, FREE)	AN, AB AN, DN, TI, AU, CS, SO, NR, DT, LA, SL, NTE, OS, AB, CC, CT, UT AN, DN, TI, AU, CS, SO, NR, DT, LA, SL, NTE, OS ALL, with delimiter for post-processing ALL, indented with text labels BIB, indented with text labels AN, CC, CT TI, CT, (random display without answer numbers) AN, TI, CC, CT	D ABS D ALL L4 1-10 D BIB D L3 DALL 5 D IALL D IBIB 7 D IND 1-3 D SCAN D TRI 4-8 L10
HIT KWIC OCC	Hit terms and fields Up to 50 words before and after hit terms (Key-Word in Context) Number of occurrences of hit terms and fields in which they occur	D HIT D KWIC D OCC

(1) Custom display only.

(2) SCAN must be specified on the command line, i.e., D SCAN or DISPLAY SCAN.

BIOENG**SELECT, ANALYZE, and SORT Fields**

The SELECT command is used to create E-numbers containing terms taken from the specified field in an answer set.

The ANALYZE command is used to create an L-number containing terms taken from the specified field in an answer set.

The SORT command is used to rearrange the search results in either alphabetic or numeric order of the specified field(s).

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Abstract	AB	Y	-
Accession Number	AN	Y	-
Author	AU	Y	A
Citation	CIT	Y	-
Classification Code	CC	Y	A
Controlled Term	CT	Y	-
Corporate Source	CS	Y	A
Data Entry Date	DED	Y	N
Document Number	DN	Y	-
Document Type	DT (TC)	Y	A
E-mail Address	EML	Y	A
International Standard (Document) Number	ISN	Y (2)	Y
Journal Title	JT	Y	A
Journal Title, Abbreviated	JTA	Y (3)	A
Journal Title, Full	JTF	Y (3)	A
Language	LA	Y	A
Note	NTE	Y	A
Number of Report	NR	Y	A
Occurrence Count of Hit Terms	OCC	N	-
Other Source	OS	Y	A
Patent Country	PC	Y	A
Patent Number	PN (PATS)	Y	A
Publication Date	PD	Y	N
Publication Year	PY	Y	N
Publisher	PB	Y	A
Source	SO	Y (4)	A
Summary Language	SL	Y	A
Title	TI	Y (default)	A
Uniform Resource Locator	URL	Y (5)	-
Update Date	UP (ED)	Y	N
Word Count, Title	WC.T	Y	N

(1) HIT may be used to restrict terms extracted to terms that match the search expression used to create the answer set, e.g., SEL HIT CC.

(2) Selects or analyzes the ISSN and ISBN with /ISN appended to the terms created by SELECT.

(3) Appends /JT to the terms created by SELECT.

(4) Selects or analyzes the ISSN and ISBN with /SO appended to the terms created by SELECT.

(5) Appends /BI to the terms created by SELECT.

Sample Records

DISPLAY IALL

ACCESSION NUMBER: 2004466256 BIOENG
DOCUMENT NUMBER: 5887012
TITLES: Development of a high cell-density fed-batch bioprocess for the heterologous production of 6-deoxyerythronolide B in *Escherichia coli*

AUTHOR: Lau, J; Tran, C; Licari, P; Galazzo, J
CORPORATE SOURCE: Department of Process Science, Kosan Biosciences, Inc. 3832 Bay Center Place, Hayward, CA 94545, USA, [mailto:lau@kosan.com]

SOURCE: Journal of Biotechnology [J. Biotechnol.]. Vol. 110, no. 1, pp. 95-103. May 2004.
Published by: Elsevier Science B.V., P.O. Box 211 Amsterdam 1000 AE Netherlands, [mailto:nlinf@elsevier.nl], [URL:http://www.elsevier.nl/] 0168-1656

ISSN: 0168-1656
DOCUMENT TYPE: Journal
LANGUAGE: English
SUMMARY LANGUAGE: English
OTHER SOURCE: Agricultural and Environmental Biotechnology Abstracts; Microbiology Abstracts A: Industrial & Applied Microbiology

ABSTRACT: A robust high cell-density fed-batch bioprocess was developed for the heterologous production of 6-deoxyerythronolide B (6-dEB), the macrocyclic core of the antibiotic erythromycin, with a recombinant *Escherichia coli* strain expressing the 6-deoxyerythronolide B synthase (DEBS) from *Saccharopolyspora erythraea*. Initial evaluation of the *E. coli* strain in a 5-l bioreactor with the addition of exogenous propionate for polyketide biosynthesis resulted in a maximum cell density of 30 g l super(-1) (OD sub(600) 60) and the production of 700 mg l super(-1) of 6-dEB. Retention of the two plasmids harboring the heterologous genes was maintained between 90 and 100% even in the absence of antibiotic selection. However, the accumulation of excess ammonia in the culture medium was found to significantly decrease the productivity of the cells. Through optimization of the medium composition and fermentation conditions, the maximum cell density was increased by two-fold, and a final titer of 1.1 g l super(- 1) of 6-dEB was achieved. This represents an 11-fold improvement compared to the highest reported titer of 100 mg l super(-1) with *E. coli* as the production host.

CLASSIFICATION CODE: 32580 Fermentation and process engineering; 01085 Erythromycins, carbomycins, spiramycins & oleandomycins; 320 Cell Culture & Batch Fermentation; 32370 Antibiotics and antitumor agents

CONTROLLED TERMS: Fed-batch culture; Erythromycin; Bioreactors; Cell density; Ammonia; Fermentation; *Escherichia coli*

UNCONTROLLED TERMS: 6-deoxyerythronolide B

