Description
BIOSIS® Toxicology is a subset of BIOSIS® Previews, with a focus on toxicology and related topics. Records are drawn from journal articles, conference papers, monographs and book chapters, notes, letters, and reports, as well as original research. U.S. patent records are also included.

Abstracts are available for records beginning in 1976.

Subject Coverage
All aspects of toxicology are covered, as they relate to:

- Agriculture
- Bacteriology
- Biochemistry
- Biophysics
- Biotechnology
- Botany
- Cell Biology
- Clinical Medicine
- Drugs
- Environmental Biology
- Environmental Science
- Experimental Medicine
- Genetics
- Immunology
- Microbiology
- Nutrition
- Occupational Health
- Parasitology
- Pathology
- Pharmacology
- Physiology
- Public Health
- Radiation Biology
- Systematic Biology
- Veterinary Science
- Virology

Date Coverage
1969–present

Update Frequency
Weekly

Geographic Coverage
International

Document Types
- Books and Monographs
- Conferences, Symposia, Meetings
- Journal Articles
- Patents

Publisher
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Improved Insecticidal Toxicity by Fusing Cry1Ac of Bacillus thuringiensis with Av3 of Anemonea viridis

Yan, Fu; Cheng, Xing; Ding, Xuezh; Yao, Ting; Chen, Hanna; et al. Current Microbiology 68.5 (May 2014): 604-609.
Show duplicate items from other databases

Abstract (summary)

Av3, a neurotoxin of Anemonea viridis, is toxic to crustaceans and cockroaches but inactive in mammals. In the present study, Av3 was expressed in Escherichia coli Origami B (DE3) and purified by reversed-phase liquid chromatography. The purified Av3 was injected into the hemocoel of Helicoverpa armigera, rendering the worm paralyzed. Then, Av3 was expressed alone or fusion expressed with the Cry1Ac in acrylamide gel electrophoresis mixture of Bacillus thuringiensis. The shape of Cry1Ac was changed by fusion with Av3. The expressed fusion protein, Cry1AcAv3, formed irregular rhombus- or crescent-shaped crystalline inclusions, which is quite different from the shape of original Cry1Ac crystals. The toxicity of Cry1Ac was improved by fusion expression. Compared with original Cry1Ac expressed in Cry(1-3), the oral toxicity of Cry1AcAv3 to H. armigera was elevated about 2.6-fold. No toxicity was detected when Av3 was expressed in Cry(1-3) alone. The present study confirmed that marine toxins could be used in bio-control and implied that fused expression with other insecticidal proteins could be an efficient way for their application.

Indexing (details)

Anemonea viridis -- species;
Anemonea viridis -- Cnidaria [41000];
Anemonea viridis -- Invertebrata;
Anemonea viridis -- Animalia;
Anemonea viridis -- Animals;
Anemonea viridis -- Invertebrata;
crustacean -- common;
crustacean -- Crustacea [75100];
crustacean -- Arthropoda;
crustacean -- Invertebrata;
crustacean -- Animalia;
crustacean -- Animals;
crustacean -- Arthropods;
crustacean -- Crustaceans;
crustacean -- Invertebrata;
Bacillus thuringiensis -- species;
Bacillus thuringiensis -- strain-Cry B;
Bacillus thuringiensis -- Endospore-forming Gram-Positives [07810];
Bacillus thuringiensis -- Eubacteria;
Bacillus thuringiensis -- Bacteria;
Bacillus thuringiensis -- Microorganisms;
Escherichia coli -- species;
Escherichia coli -- expression system;
Escherichia coli -- strain-Origami B;
Escherichia coli -- Enterobacteriaceae [06702];
Escherichia coli -- Facultatively Anaerobic Gram-Negative Rods;
Escherichia coli -- Eubacteria;
Escherichia coli -- Bacteria;
Escherichia coli -- Microorganisms;
Helicoverpa armigera -- species;
Helicoverpa armigera -- pest;
Helicoverpa armigera -- Invertebrata;
Helicoverpa armigera -- Animalia;
Helicoverpa armigera -- Animals;
Helicoverpa armigera -- Arthropods;
Helicoverpa armigera -- Insects;
Helicoverpa armigera -- Invertebrata;
cockroach -- common;
cockroach -- Orthoptera [75340];
cockroach -- Insects;
cockroach -- Arthropoda;
cockroach -- Invertebrata;
cockroach -- Animalia;
cockroach -- Animals;
cockroach -- Arthropods;
cockroach -- Insects;
cockroach -- Invertebrates;
hemocoe -- circulatory system;
reversed-phase liquid chromatography -- laboratory techniques;
reversed-phase liquid chromatography -- chromatographic techniques

Classification
03506: Genes - Animal
10060: Biochemistry studies - General
10064: Biochemistry studies - Proteins, peptides and amino acids
14504: Cardiovascular system - Physiology and biochemistry
20506: Nervous system - Pathology
22501: Toxicology - General and methods
31000: Physiology and biochemistry of bacteria
31500: Genetics of bacteria and viruses
34000: Pest control; general, pesticides and herbicides
60015: Economic entomology - Chemical control and apparatus
64008: Invertebrata: comparative, experimental morphology, physiology and pathology - Crustacea
64054: Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: crustacea
64076: Invertebrata: comparative, experimental morphology, physiology and pathology - Insects: physiology

Major concept
Biochemistry and Molecular Biophysics, Toxicology, Pesticides

Biological organism
Organism: Anemonea viridis, species
Supertaxa: Invertebrata, Animalia
Taxonomic notes: Animals, Invertebrates

Biosystematic class: Crustacea [41000];
Organism: crustacean, common
Supertaxa: Arthropoda, Invertebrata, Animalia
Taxonomic notes: Animals, Arthropods, Crustaceans, Invertebrates

Biosystematic class: Crustacea [75100];
Organism: Bacillus thuringiensis, species
Detail: strain-Cry B
Supertaxa: Eubacteria, Bacteria, Microorganisms
Taxonomic notes: Bacteria, Eubacteria, Microorganisms

Biosystematic class: Endospore-forming Gram-Positives [97810];
Organism: Escherichia coli, species
Detail: strain-Origami B
Role: expression system
Supertaxa: Facultatively Anaerobic Gram-Negative Rods,
Eubacteria, Bacteria, Microorganisms
Taxonomic notes: Bacteria, Eubacteria, Microorganisms

Biosystematic class: Enterobacteriaceae [66702];
Organism: Helicoverpa armigera, species
Role: pest
Supertaxa: Insecta, Arthropoda, Invertebrata, Animalia
Taxonomic notes: Animals, Arthropods, Insects, Invertebrates

Biosystematic class: Lepidoptera [75330];
Organism: codroach, common
Supertaxa: Insecta, Arthropoda, Invertebrata, Animalia
Taxonomic notes: Animals, Arthropods, Insects, Invertebrates

Biosystematic class: Orthoptera [75340]

Genetic sequence
Sequence: P01535
Detail: amino acid sequence
Databank: UniProt

Method and equipment
reversed-phase liquid chromatography -- laboratory techniques,
reversed-phase liquid chromatography -- chromatographic techniques

crystal structure

Identifier (keyword)
Av3, Cry1Aa
**Search Fields**

You can use field codes on the Basic Search, Advanced Search, and Command Line Search pages to limit searches to specific fields. The table below lists the field codes for this database.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Code</th>
<th>Example</th>
<th>Description and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>AB</td>
<td>ab(reversed-phase liquid chromatography)</td>
<td>Use adjacency and/or Boolean operators to narrow search results.</td>
</tr>
<tr>
<td>Abstract present</td>
<td>ABANY</td>
<td>“Bacillus thuringiensis” AND abany(yes)</td>
<td>Add: AND ABANY(YES) to a query to limit retrieval to records with abstracts.</td>
</tr>
<tr>
<td>Accession number</td>
<td>AN</td>
<td>an(TOXB201400031332)</td>
<td>A unique document identification number assigned by the information provider.</td>
</tr>
<tr>
<td>All fields</td>
<td>ALL</td>
<td>all(“marine toxins” NEAR/4 bio-control)</td>
<td>Searches all fields in bibliographic files. Use adjacency and/or Boolean operators to narrow search results.</td>
</tr>
<tr>
<td>All fields + text</td>
<td>--</td>
<td>(“marine toxins” N/4 bio-control)</td>
<td>Same as ALL field code: searches all fields in bibliographic files.</td>
</tr>
<tr>
<td>Author1</td>
<td>AU</td>
<td>au(chen, hanna)</td>
<td>Includes all Authors.</td>
</tr>
<tr>
<td>Author First Name</td>
<td>AUFN</td>
<td>au(chen)</td>
<td></td>
</tr>
<tr>
<td>Author Last Name</td>
<td>AULN</td>
<td>au(hanna) or au(h*)</td>
<td></td>
</tr>
</tbody>
</table>

1 A Lookup/Browse feature is available for this field in the Advanced Search dropdown or in Browse Fields.
<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Code</th>
<th>Example</th>
<th>Description and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First author</td>
<td>FAU</td>
<td>fau(“yan, fu”)</td>
<td>First name listed in Author field. It is included in Author browse, but its position cannot be specified in the Author browse.</td>
</tr>
<tr>
<td>Author affiliation</td>
<td>AF</td>
<td>af(“Hunan Normal Univ” and china)</td>
<td>Includes as much data as is available in the original document, such as department, organization, address, city, state, country, author email, etc.</td>
</tr>
<tr>
<td>CAS® Registry Number</td>
<td>RN, SUBST</td>
<td>rn(1199-18-4)</td>
<td>Also searchable using the Substance field code (SUBST).</td>
</tr>
<tr>
<td>Classification¹</td>
<td>CC, BC</td>
<td>cc(03506) cc(“genetics - animal”) bc(75326) bc(“hymenoptera”)</td>
<td>BC=Biosystematic Codes CC=Concept Codes.</td>
</tr>
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<td>Conference location</td>
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</tr>
<tr>
<td>Conference sponsor</td>
<td>CS</td>
<td>cs(“amer acad neurol”)</td>
<td></td>
</tr>
<tr>
<td>Conference title</td>
<td>CFTI</td>
<td>cfti(“63rd Annual Meeting of the American-Academy-of-Neurology”)</td>
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</tr>
<tr>
<td>Date created</td>
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<td>dcre(20160301)</td>
<td>This represents the date BIOSIS created the record and added it to their system. It predates its delivery to ProQuest and has no relation to the ProQuest update date. If a document has been revised by BIOSIS it does NOT have a Date created date; instead a Date revised date is displayed. See also Document status. Date range searching is supported.</td>
</tr>
<tr>
<td>Date revised</td>
<td>DREV</td>
<td>drev(&gt;20171231)</td>
<td>This represents the date BIOSIS last revised the record. It predates its delivery to ProQuest and has no relation to the ProQuest update date. If a document has never been revised by BIOSIS it does NOT have a Date revised date; only a Date created date is displayed. See also Document status. Date range searching is supported.</td>
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<td>DOI</td>
<td>doi(10.1007/s00284-013-0516-1)</td>
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<td>Also searchable using the Subject field code (SU).</td>
</tr>
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<td>Document status</td>
<td>DSTAT</td>
<td>dstat(new) dstat(revised)</td>
<td>BIOSIS records have a status of New OR Revised. See also Date created and Date revised.</td>
</tr>
<tr>
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<td>TI</td>
<td>ti(“Improved Insecticidal Toxicity by Fusing Cry1Ac of Bacillus thuringiensis”)</td>
<td>Includes Alternate Title (OTI), but not Publication Title (PUB).</td>
</tr>
<tr>
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<td>OTI</td>
<td>oti(phenoxycarbonsaeure -herbizide)</td>
<td>Includes Alternate title, subtitle, and original-language of document title, if available.</td>
</tr>
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<td>dtype(article)</td>
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</tr>
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<td>Field Code</td>
<td>Example</td>
<td>Description and Notes</td>
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<tr>
<td>First available</td>
<td>FAV</td>
<td>fav(2014-04-16)</td>
<td>Indicates the first time a document was loaded on PQD. It will not change regardless if how many times the document is subsequently reloaded, as long as the Accession Number remains the same.</td>
</tr>
<tr>
<td>From database</td>
<td>FDB</td>
<td>&quot;PC12 cell line&quot; AND fdb(biosistoxicology)</td>
<td>Useful in multi-file searches to isolate records from a single file. FDB cannot be searched on its own; specify at least one search term then AND it with FDB.</td>
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<td>Also searchable using the Substance field code (SUBST).</td>
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<tr>
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<td>Genetic sequence</td>
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<td>gq(UniProt)</td>
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<tr>
<td>ISSN</td>
<td>ISSN</td>
<td>issn(0343-8651)</td>
<td>Also searchable via the Look Up Citation tool.</td>
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<td>Issue</td>
<td>ISS</td>
<td>iss(5)</td>
<td>Also searchable via the Look Up Citation tool.</td>
</tr>
<tr>
<td>Language</td>
<td>LA</td>
<td>la(english)</td>
<td>The language in which the document was originally published.</td>
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<tr>
<td>Language of abstract</td>
<td>SL</td>
<td>sl(English)</td>
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<tr>
<td>Location</td>
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<td>loc(sweden)</td>
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<tr>
<td>Major concept</td>
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<td>mjcn(pharmacology)</td>
<td>Also searchable using the Subject field code (SU).</td>
</tr>
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<td>Method and equipment</td>
<td>MQ</td>
<td>mq(&quot;reversed-phase liquid chromatography&quot;)</td>
<td>Also searchable using the Subject field code (SU).</td>
</tr>
<tr>
<td>Organism</td>
<td>ORM</td>
<td>orm(&quot;crustacean&quot;)</td>
<td>Also searchable using the Subject field code (SU).</td>
</tr>
<tr>
<td>Other subject</td>
<td>OSU</td>
<td>osu(&quot;systems biology&quot;)</td>
<td>Also searchable using the Subject field code (SU).</td>
</tr>
<tr>
<td>Patent assignee</td>
<td>PA</td>
<td>pa(&quot;du pont&quot; or dupont)</td>
<td></td>
</tr>
<tr>
<td>Patent information</td>
<td>PAT</td>
<td>pat(&quot;merck sharp&quot;)</td>
<td>Includes patent assignee and publication number.</td>
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<tr>
<td>Patent number</td>
<td>PN</td>
<td>pn(&quot;07902231&quot;)</td>
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<td>Pagination</td>
<td>PG</td>
<td>pg(604-609)</td>
<td>Includes: start page (and end page – where available). The start page is searchable on the Look Up Citation page.</td>
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<td>Part and structure</td>
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<td>por(hemocoel)</td>
<td>Also searchable using the Subject field code (SU).</td>
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<tr>
<td>Publication date</td>
<td>PD</td>
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<td>Date range searching is supported.</td>
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<tr>
<td>Publication title</td>
<td>PUB</td>
<td>pub(current microbiology)</td>
<td>Title of publication where document originally appears, commonly a monograph or periodical title.</td>
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<td>pstype(article)</td>
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<tr>
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<td>yr(2014)</td>
<td>Date range searching is supported.</td>
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<tr>
<td>Source information</td>
<td>SRC</td>
<td>src(ACS chemical neuroscience)</td>
<td>Includes Publication title, Issue, Volume, ISSN, Publication date, and Pagination.</td>
</tr>
<tr>
<td>Start page</td>
<td>PAGE</td>
<td>page(605)</td>
<td></td>
</tr>
<tr>
<td>Subject1</td>
<td>SU</td>
<td>su(&quot;anemonia viridis&quot;)</td>
<td>Includes the majority of descriptor fields.</td>
</tr>
<tr>
<td>Substance</td>
<td>SUBST</td>
<td>subst(cry1AC)</td>
<td>Includes: CAS Registry Number (RN) and Enzyme Commission number (ECN).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>subst(216864-07-02)</td>
<td></td>
</tr>
</tbody>
</table>

2 Click the “Field codes” hyperlink at the top right of the Advanced Search page. Click “Search syntax and field codes”, then click on “FDB command” to get a list of database names and codes that can be searched with FDB.
In addition to Search Fields, other tools available for searching are **Limit Options, Command Line Common Concepts, Browse Fields, "Narrow Results By" Limiters** and **Look Up Citation**. Each is listed separately below. Some data can be searched using more than one tool.

### Limit Options

Limit options are quick and easy ways of searching certain common concepts. Check boxes are available for:

- Abstract included
- Humans
- Animals
- Plants
- Microorganisms
- Females
- Males

Short lists of choices are available for:

- Document type
- Language

Date limiters are available in which you can select single dates or ranges of dates for date of publication and updated.

### Command Line Common Concepts

- Find articles on humans: HUMAN(YES)
- Find articles on animals: ANIMAL(YES)
- Find articles on males: MALE(YES)
- Find articles on females: FEMALE(YES)
- Find articles on microorganisms: MICROORGANISM(YES)
- Find articles on plants: PLANT(YES)
- Find review articles: DTYPE(REVIEW)

### Browse Fields

You can browse the contents of certain fields by using Look Up lists. These are particularly useful to validate spellings or the presence of specific data. Terms found in the course of browsing may be selected and automatically added to the Advanced Search form. Look Up lists are available in the fields drop-down and in the search options for:

- Major concept
- Concept code
- Biosystematic code
- Super taxa
- CAS Registry numbers

And in the fields drop-down only for:

- Author
- Publication title

### “Narrow Results By” Limiters

When results of a search are presented, the results display is accompanied by a list of “Narrow results by” options shown on the right-hand panel. Click on any of these options and you will see a ranked list showing the most frequently occurring terms in your results. Click on the term to apply it to (“narrow”) your search results. “Narrow results by” limiters in BIOSIS Toxicology include:

- Author
- Language
- Publication title
- Subject
- Document type
- Publication date
Look Up Citation

If you need to trace a particular bibliographic reference, use the Look Up Citation feature. Find a link to this toward the top left of the Advanced Search page, or in the drop list under Advanced on any search form; click this and you will go to a form where you can enter any known details of the citation, including document title, author, journal name, volume, issue, page, publication date, ISSN.

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Email: Customer@dialog.com
Within North America: 1 800 3 DIALOG (1 800 334 2564)
Outside North America: 00 800 33 DIALOG (00 800 33 34 2564)