



**PROCEDURES FOR REGISTRATION  
OF VETERINARY BIOLOGICS (EXCLUDING VACCINES)/ DIAGNOSTIC TEST KITS  
FOR ANIMAL USE IN MALAYSIA**

Key word: biologic registration, diagnostic test kits registration, animal use

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DEPARTMENT OF VETERINARY SERVICES  
MINISTRY OF AGRICULTURE AND AGRO-BASED INDUSTRY

## **ABBREVIATIONS**

COA	Certificate of Analysis
COO	Certificate of Origin
DVS	Department of Veterinary Services
GMP	Good Manufacturing Practice
GQC	Good Quality Control
TACB	Technical and Advisory Committee on Biologics
MAQIS	Department Of Quarantine And Inspection Services Malaysia



## PROCEDURES FOR REGISTRATION OF VETERINARY BIOLOGICS (EXCLUDING VACCINES) / DIAGNOSTIC TEST KITS IN MALAYSIA

### 1. INTRODUCTION

Section 84, Animal Act 1953, requires a person to get a written permission from the Director General to import any living disease germ or virus or any bacterial culture or part of them used for diagnosis, treatment, research and control or prevention of disease.

There are many types of biologics available, each with different function and purpose such as vaccines, antibody products, and in vitro diagnostic test kits.

Veterinary biologics must meet certain basic criteria, include:

- **Safety:** the product must be safe in the target species and, if live, in species exposed to shed organisms;
- **Efficacy:** the product should be effective according to claims indicated on the label;
- **Quality:** includes purity, potency and consistency;
- **Purity:** the product must be free from contaminating agents;
- **Potency:** each batch of product should be formulated, and tested, to ensure effectiveness and reproducibility of activity as demonstrated in the registration data

The objective of this registration is to help protect the health of animals (including domestic livestock, poultry, companion animals, wildlife, and aquatic species) as well as helping to safeguard public health and food safety by controlling indigenous animal disease and preventing the introduction and dissemination of foreign animal diseases.

As the regulatory agency to enforce legislative requirements, Department of Veterinary Services (DVS) has set down specific procedures for registration of veterinary biologics in Malaysia with regards to production, importation, distribution, sale and use.

The purpose of this guideline is to provide information to the applicant regarding the preparation and submission of documents for the registration of veterinary biologics in Malaysia. The Biosecurity and SPS Management Division is responsible for registration of veterinary biologics, manufactured and/or distributed in Malaysia.

The related official form for submission of dossier / dossier check list for registration as well as the appropriate veterinary biologics procedures, should be consulted when preparing a new product submission for registration.

A new product submission should be submitted to DVS after the licensing process is complete in the country of manufacture. All documents pertinent to product registration must be submitted at the same time. All documents, including study reports and labels must be reviewed and approved by the Technical and Advisory Committee on Biologics (TACB) prior to the product registration.



## 2. SCOPE

- 2.1 The procedures shall apply to registration of veterinary biologics/ diagnostic test kits other than vaccines.
- 2.2 Veterinary biologics products needs to registered under DVS include product:
- i. Diagnostics test kit are products used to determine the health status of an animal or diagnosis of animal disease.
  - ii. Bacterins, bacterial extracts, toxoid are made from viruses, bacteria, spores or other disease-causing organisms; may contain whole organisms or selected portions of an organism.
  - iii. Immunomodulators are products used to stimulate or suppress the immune system and to treat certain types of tumors or infection.
  - iv. Immunological products including antisera, antitoxins, monoclonal antibodies, specific immunoglobulins are products containing protective antibodies against a particular organism or a toxic substance that the organism produces.
  - v. Biotechnology products including rDNA products, recombinant antibodies, monoclonal antibodies and derivatives, gene therapy products
  - vi. Blood products including plasma, albumin, clotting factors, fibrinogens, immunoglobulin
  - vii. Hormon, enzyme, probiotic, feed additive
  - viii. Microorganism either live, killed or attenuated  
*Microscopic or sub-microscopic organisms, which are sometimes referred to as organisms, which may introduce or disseminate disease of animal*
- 2.3 Veterinary biologics for research purpose may not be subjected to registration procedures but shall have written permission from DVS prior to importation.  
(Please refer to Guidelines of Veterinary Biologics for Research Use)
- 2.4 This procedure shall apply to Peninsular Malaysia and Federal Territory of Labuan.

## 3. PURPOSE OF PROCEDURES

- 3.1 To provide the local manufacturer, importer and distributor with guidelines on preparing submissions for registration of veterinary biologics/ diagnostic test kits of animal origin and/or for animal use in Malaysia.
- 3.2 To regulate use of veterinary biologics/ diagnostic test kits for animal use in Malaysia.



#### 4. DEFINITION

- 4.1 **"animal"** includes any quadruped or bird either domesticated or otherwise fish, reptile or insect.
- 4.2 **"Director-General"** means the Director General of Veterinary Services appointed under section 3 of Animal Act 1953 and includes the Deputy Director-General under the same section.
- 4.3 **"diagnostic test kit"** is a product that is used in the course of a chemical or analytical procedure for laboratory, industrial, educational, or research purposes, used to determine the health status of an animal.
- 4.4 **"importer"** includes any person who, whether as owner, consignor, consignee, agent or broker, is in possession of, or is otherwise entitled in the custody or control, of the imported biologics/ diagnostic test kits.
- 4.5 **"Immunomodulators"** includes any products used to stimulate or suppress the immune system and to treat certain types of tumors or infections.
- 4.6 **"live culture"** means live microorganism which is grown under controlled condition
- 4.7 **"local agent"** means any person or organization that has been appointed and authorized by the manufacturer to import and distribute the product.
- 4.8 **"manufacturer"** includes any person who, formulates, prepares, compounds, mixes, makes, packs or labels any veterinary biologics product with a view to its sale or for own use but does not include a *bona fide* research or experiment relating to biologics/ diagnostic test kits and any action forming part of or incidental to such research or experiment.
- 4.9 **"premises"** includes any house, shop, store, room, cubicle, shed, conveyance, structure or any place whether open or enclosed.
- 4.10 **"Sole agent"** is the only person or organization who appointed as agent or representative.
- 4.11 **"vaccine"** means any culture or living preparation of the causative agent of any disease  
*a suspension of attenuated or killed microorganisms (viruses, bacteria), administered for prevention, amelioration, or treatment of infectious diseases.*
- 4.10 **"veterinary biologics"** means any viruses, serums, toxins, and analogous products of natural or synthetic origin, including genetically modified organism, diagnostics, antitoxins, vaccines, live microorganisms, killed micro-organisms, and the antigenic or immunizing component of micro-organisms intended for use in the



diagnosis, treatment, or prevention of diseases of animals or birds, for the purposes of research in animals or birds

*Means any products derived from living organisms and biological process, which used to prevent, diagnose, or treat animal diseases and function through an immunological process.*

## **5. REGISTRATION OF VETERINARY BIOLOGICS/ DIAGNOSTIC TEST KIT**

5.1. Registration will be based on evaluation of technical information and complete supporting documents provided in the registration file of the veterinary biologics/ diagnostic test kit together

- a) Applications shall be made by a registered Malaysian company.
- b) TACB 9 should be completed and submitted by applicants with the covering letter stating clearly the purpose of the application.
- c) Please use an appropriate checklist:
  - i. Test kit
  - ii. Animal feed product
  - iii. Enzyme and hormone
- d) Authorized English translation must accompany any material not published in English.
- e) All required documents should be placed in binders, arrange using the TACB 9 Form as a table of contents.

### **5.2. General criteria for product acceptability**

- a) The product must be pure, safe, potent and efficacious.
- b) The product must be licensed by, or have the approval of, the regulatory authorities in the country of manufacture.
- c) Each biologically active component must be relevant to infectious animal diseases conditions and animal genetic in Malaysia.
- d) The product must be manufactured in a GMP facility.

### **5.3. General considerations concerning a new product submission**

- a) New product submissions for imported products must be complete, and when applicable, regulatory approval must have been received in the country of manufacture, before the new product submission (NPS) will be considered for evaluation.



- b) A completed *New Product Submission Checklist* must accompany each NPS.
- c) Each NPS must include a brief justification for use of the veterinary biologic in Malaysia. Statements must be supported by scientific references and/or opinions expressed by professional associations, or a written statement prepared by the manufacturer. Rationales should be submitted on company letterhead, dated and signed by the person preparing the rationale.
- d) All required documents for the NPS should be placed in binders, arranged using the *New Product Submission Checklist* as a table of contents and with corresponding section dividers (tabs) identifying the documents.
- e) The use of double-sided photocopies for protocols and reports of support studies, including data, is recommended to reduce the volume of paper submitted.
- f) All documents must be submitted in English. If the original documents are written in a language other than English a certified translation is required.
- g) Various restrictions and conditions may be applied once licensing is complete. These restrictions and conditions will be listed on the Veterinary Biologics Product Certificate, and explained in supplemental correspondence as required.

## **6. REGISTRATION OF ANIMAL FEED CONTAINING VETERINARY BIOLOGICAL SUBSTANCE**

- 6.1. Animal feed either single or multiple material whether processed, semi-processed or raw, which is intended to be fed to animals are subject to the Animal Feed Act. It may include enzyme, probiotic and feed additive.
- 6.2. These products have to registered and approved as products containing veterinary biologics before apply for Animal Feed License.

## **7. CERTIFICATE OF PRODUCT REGISTRATION**

A certificate of registration shall be issued for a period of 5 years from the date of approval.

## **8. LOCAL AGENT**

- 8.1 The local agent must provide detail information and complete documentation.
- 8.2 Local agent shall be responsible to register and to import the product.
- 8.3 Local agent shall provide confirmation of appointment as a local agent by manufacturer.
- 8.4 Application must include the following details for DVS evaluation:
  - i. Name and address of company (must be a Malaysian registered company – with document evidence)
  - ii. Copy of registration certificate (ROC) of the company
  - iii. Copy of memorandum and articles of association of the company
  - iv. Letter of attorney/authorization letter by the manufacturer as a sole agent



- v. Standard operating procedures (SOPs) for handling and disposal of bio-hazardous materials.
- 8.5 DVS may carry out inspection of the facilities of the local agent/ distributor.
- 8.6 The local agent may appoint local distributors and shall provide the DVS the list of distributors as and when necessary.

## **9. RENEWAL OF REGISTRATION**

- 9.1 The local agent is required to submit the official application for renewal of registration of veterinary biologics at least 3 months prior to the expiry of validity.
- 9.2 Letter of authorization from the manufacturer to the appointed local agent for at least 5 years from the date of the renewal.
- 9.3 A copy of present registration certificate must be submitted together.
- 9.4 The latest COA shall submitted together.
- 9.5 Other new technical information or additional information must be provided.
- 9.6 Registered veterinary biologics which are not renewed will be deregistered.

## **10. CHANGE LOCAL AGENT**

- 10.1 Any transfer of local agent in Malaysia by the registered manufacturer must be notified immediately to the DVS, in writing.
- 10.2 The newly appointed local agent must fulfill all the requirements in para 9.
- 10.3 Letter of attorney/authorization letter to the newly appointed local agent must be issued by the manufacturer.
- 10.4 Consent letter and acceptance letter from both companies.
- 10.5 Please attached together the registration certificates of the products to be transferred and latest COA.
- 10.6 Other new technical information or additional information must be provided along.
- 10.7 Any transfer of marketing authorization will only be considered upon the expiry of existing registration (based on the validity date stated in the Veterinary Biologics Registration Certificate) except the previous company give letter of consent to DVS to agree on the transfer.

## **11. CHANGE/AMMEND OF PRODUCT INFORMATION**

The local agent must inform DVS for any changes of product information. It could be label, ingredient and manufacturer. Document needed:



- 11.1 Declaration letter from manufacturer.
- 11.2 Please attached together the registration certificates of the products.
- 11.3 Please attached together supportive document such a latest labeling, COA, COO or any related information subjected to amend.
- 11.4 Please attached together consent letter from manufacturer

## **12. DEREGISTRATION OF VETERINARY BIOLOGIC/ TEST KIT**

- 12.1 TACB will, from time to time, advice the Director General of Veterinary Services (DGVS) Malaysia on the need for deregistration of any veterinary biologic/ diagnostic test kit.
- 12.2 DVS reserves the right to withdraw the registration in the event that there is non-compliance of the biologic to safety, potency, efficacy and purity standards or adverse reactions or health hazard to human or animals.
- 12.3 If the samples of product taken during DVS monitoring fail to meet the specifications, the registration of the product will be suspended. The distributor/ manufacturer have 30 days to identify the source/cause of quality defect and actions to be taken to improve quality. Failure to do so may effect in deregistration of the product.

## **13. OTHERS**

### **13.1 Monitoring By DVS**

- 13.1.1 The DVS has the right to inspect local manufacturer and importer premises, storage and transportation facilities without early noticed.
- 13.1.2 DVS may take samples of the biological products/ diagnostic test kit for the purpose of evaluation as when necessary.
- 13.1.3 In case of non-compliance to storage, handling and transportation facilities, the biologic/ diagnostic test kit may be placed under restriction until further evaluation and the non-compliance corrected.
- 13.1.4 The manufacturer/importer/distributor is responsible to report any contamination associated with the use of the product in the field/ laboratory.
- 13.1.5 Manufacturer/Importer/distributor are also responsible to dispose the contaminated products in a proper way.
- 13.1.6 In the event that there is a consumer report or complaints, DVS may conduct an investigation and require the manufacturer/importer to provide data demonstrating the purity, safety, potency and efficacy of the product and submit samples to DVS's laboratories for confirmatory testing.

### **13.2 Import of Biologics/ Diagnostic Test Kits**



- 13.2.1 Veterinary Biologic/ diagnostic test kit products registered with DVS shall be imported for sale and use with an import license issued by MAQIS.
- 13.2.2 A person/company who wish to import/ export veterinary biologics/ diagnostic test kit product for commercial purpose must first be registered with Dagang Net Technologies Sdn. Bhd. ([www.dagangnet.com](http://www.dagangnet.com)). An import/ export permit application shall be made via online at <http://epermit.dagangnet.com>.
- 13.2.3 Every consignment shall be accompanied by a declaration by the authorities or manufacturer regarding safety of the product.
- 13.2.4 In case of non-compliance, the consignment may be rejected and returned to country of origin, may be disposed or placed under provisional release to the premises / storage until further tests can be carried out.

### **13.3 Appeal Against TACB Decisions**

- 13.3.1 Any applicants aggrieved by the decision of TACB committee may make a written appeal to the DVS within fourteen (14) days from the day of the notification.
- 13.3.2 A period of 60 days is given for submission of any supporting data/ information. The appeal is considered closed if all the required information is not submitted within the stated time given without reasonable cause. A request for extension of this period will not be entertain.
- 13.3.3 The decision of the appeal is final.

## **14. APPLICATION AND ENQUIRY**

All applications and enquiries for registration of veterinary biologics for importation, production, sale and use in Malaysia must be made by writing direct to:

Director General  
Department of Veterinary Services (DVS)  
Ministry of Agriculture and Agro-Based Industry,  
Wisma Tani, Blok Podium, Lot 4G1, Precinct 4,  
Federal Government Administration Centre,  
62630 Putrajaya, Malaysia  
(Attn: TACB Secretary)  
Tel : 03 – 88702000/ 2099/ 2102 / 2105  
Fax : 03 – 88886472



## LIST OF VETERINARY BIOLOGIC ALLOWED TO USED IN ANIMAL

ENZYME (ANIMAL ORIGIN)	SOURCES
$\alpha$ -Amylase	Porcine pancreas
Lipase	Bovine stomach, salivary glands or forestomach of calf, kid or lamb, hog, bovine pancreas
Pepsin	Bovine stomach, hog stomach
Phospholipase A <sub>2</sub>	Porcine pancreas
Crude renin	Bovine, calf, goat, kid, sheep or lamb stomach
Trypsin	Porcine or bovine pancreas

ENZYME (MICROBIAL ORIGIN)	SOURCES
$\alpha$ -Acetolactate decarboxylase	Bacillus subtilis
Aminopeptidase	Lactococcus lactis
$\alpha$ -Amylase	Aspergillus niger Aspergillus oryzae Bacillus licheniformis Bacillus subtilis Bacillus amyloliquefaciens Bacillus lentus Bacillus stearothermophilus Rhizopus niveus Rhizopus oryzae
Arabinase	Aspergillus niger
Carboxyl proteinase	Aspergillus niger Aspergillus niger Aspergillus oryzae Bacillus lentus Bacillus subtilis
Catalase	Aspergillus niger Micrococcus lysodeikticus
Cellulose multicomponent enzyme	Aspergillus niger Trichoderma reesii
Cellulase	Aspergillus niger Humicola insolens Trichoderma longibrachiatum
Dextranase	Chaetomium gracile Penicillium lilacium
Esterase	Rhizomucor meihei
Fructosyl transferase Arabino-furanosidase	Aspergillus niger
$\alpha$ -Galactosidase	Aspergillus niger Mortierella vinaceae Saccharomyces sp
$\beta$ -Glucanase	Bacillus subtilis Bacillus lentus



	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Aspergillus aculeatus</i> <i>Penicillium emersonii</i> <i>Trichoderma harzianum</i> <i>Trichoderma reesii</i> <i>Disporotrichum dimorphosporum</i> <i>Humicola insolens</i> <i>Penicillium funiculosum</i>
Glucoamylase (Amyloglucosidase)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Rhizopus niveus</i>
$\beta$ -Glucosidase	<i>Aspergillus niger</i>
Glucose isomerase (Xylose isomerase)	<i>Bacillus coagulans</i> <i>Actinoplanes missouriensis</i> <i>Streptomyces murinus</i> <i>Streptomyces rubiginosus</i> <i>Microbacterium arborecens</i>
Glucose oxidase	<i>Aspergillus niger</i>
Hemicellulase	<i>Aspergillus niger</i> <i>Aspergillus aculeatus</i> <i>Bacillus lentus</i> <i>Bacillus subtilis</i> <i>Trichoderma reesii</i> <i>Trichoderma longibrachiatum</i>
Hemicellulase endo-1,4- $\beta$ -D xylanase	<i>Humicola insolens</i> <i>Trichoderma reesii</i>
Hesperidinase	<i>Aspergillus niger</i>
Invertase	<i>Saccharomyces cerevisiae</i> <i>Saccharomyces cerevisiae</i> var <i>carlsbergensis</i> <i>Aspergillus niger</i>
Inulinase	<i>Aspergillus niger</i>
Lactase ( $\beta$ -Galactosidase)	<i>Saccharomyces fragilis</i> <i>Saccharomyces lactis</i> <i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Candida pseudotropicalis</i>
Lipase	<i>Aspergillus niger</i>
Maltase ( $\alpha$ -glucosidase)	<i>Aspergillus oryzae</i>
Metalloproteinase	<i>Aspergillus oryzae</i> <i>Bacillus subtilis</i> <i>Bacillus coagulans</i>
Naringinase	<i>Aspergillus niger</i>
Pectinase	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Aspergillus aculeatus</i> <i>Rhizopus oryzae</i> <i>Trichoderma reesii</i>
Pentosanase	<i>Humicola insolens</i>
Phytase	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Schizosaccharomyces</i>



	Penicillium funiculosum
Pullulanase	Bacillus acidopullulyticus Bacillus subtilis Klebsiella aerogenes
Renin	Rhizomucor meihei Mucor pusillus Endothia parasitica
Serine proteinase	Bacillus licheniformis
Beta-Mannanase	Aspergillus niger Bacillus lentus Trichoderma longibrachiatum
Xylanase	Aspergillus niger Aspergillus oryzae Bacillus lentus Bacillus subtilis Humicola insolens Penicillium funiculosum Trichoderma longibrachiatum
Lipase	Aspergillus niger Aspergillus oryzae Candida rugose Rhizomucor meihei Rhizopus oryzae
Keratinase	Bacillus licheniformis
Protease	Aspergillus niger Aspergillus oryzae Bacillus amyloliquefaciens Bacillus licheniformis Bacillus subtilis



## Probiotic

The following microorganisms are allowed to be used for animals

Aspergillus niger	Lactobacillus curvatus
Aspergillus oryzae	Lactobacillus delbruekii
Bacillus coagulans	Lactobacillus farciminis
Bacillus lentus	Lactobacillus fermentum
Bacillus licheniformis	Lactobacillus helveticus
Bacillus pumilus	Lactobacillus lactis
Bacillus subtilis	Lactobacillus plantarum
Bacteroides amylophilus	Lactobacillus euterii
Bacteroides capillosus	Leuconostoc mesenteroides
Bacteriodes ruminicola	Pediococcus acidilacticii
Bacteriodes suis	Pediococcus cerevisiae
Bifidobacterium adolescentis	Pediococcus pentosaceus
Bifidobacterium animalis	Propionibacterium acidpropionic
Bifidobacterium bifidum	Propionibacterium freeudenreichii
Bifidobacterium infantis	Propionibacterium shermanii
Bifidobacterium longum	Saccharomyces cerevisae
Bifidobacterium thermophilus	Enterococcus cremoris
Lactobacillus acidophilus	Enterococcus diacetylactis
Lactobacillus brevis	Enterococcus faecium
Lactobacillus buchneri	Enterococcus intermedius
Lactobacillus casei	Enterococcus lactis
Lactobacillus cellobiosus	Enterococcus thermophilus

Reference: Attachment A, Guidelines for the Registration of Direct Fed Microbial Products, Guidelines number 9, APVMA



## HORMONE

Altrenogest
Oxytocin
Cloprostenol
Lecirelin
<b>Oestrogen</b>
DES
Hexoestrol
Zeranol (Synthetic)
<b>Gestagens</b>
Melengestrol acetate
<b>Androgen</b>
TBA(Synthetic)
<b>Combination</b>
DES and Testosterone
DES and Metyl-testosterone
Hexoestrol and TBA
Zeranol and TBA
Oestradiol-17 $\beta$ benzoate and testosterone propionate
Oestradiol-17 $\beta$ benzoate and progesterone

TBA: Trenbolone acetate, DES: diethylstilboestrol

## References:

1. AUSTRALIAN PESTICIDES AND VETERINARY MEDICINES AUTHORITY  
<http://www.apvmagov.au>
2. The Regulatory Environment by Betty Pendleton, Direct-fed Microbial, Enzyme & Forage Additive Compendium
3. Committee for medicinal Products for veterinary use, European Medicine Agency Veterinary Medicines and Inspections
4. Steroid Hormones in Food Producing Animals: Regulatory Situation in Europe,  
[www.intechopen.com](http://www.intechopen.com)
5. The use of hormone in animal production, <http://www.fao.org>



**PRODUK ENZIM YANG DIBENARKAN UNTUK DIDAFTARKAN**

$\alpha$ -Amylase	Hemicellulase endo-1,4- $\beta$ -xylanase
$\beta$ -Amylase	Hexose oxidase
$\alpha$ -Acetolactate decarboxylase	Inulinase
$\alpha$ -Arabinofuranosidase	Invertase
Aminopeptidase	Lipase
Arabinase	Lysophospholipase
Bromelain	Maltogenic $\alpha$ -Amylase
Carboxyl proteinase	Metalloproteinase
Carboxylesterase	Mucorpepsin
Catalase	Papain
Cellulase	Pectin lyase
Chymosin	Pectinesterase
Cyclodextrin glucanotransferase	Pepsin
Dextranase	Phospholipase A <sub>1</sub>
Endo-arabinase	Phospholipase A <sub>2</sub>
Endo-1-4- $\beta$ -mannase	3-Phytase
Ficin	4-Phytase/ 6-Phytase
$\alpha$ -Galactosidase	Polygalacturonase or Pectinase multicomponent enzyme
$\alpha$ -Glucosidase	Pollulanase
$\beta$ -Glucosidase	Serine proteinase
Glucan 1,3- $\beta$ -glucosidase	Transglucosidase
$\beta$ -Glucanase	Transglutaminase
Glucoamylase	Trypsin
Glucose oxidase	Urease
Hemicellulase (Multicomponent enzyme)	Xylose isomerase
Hemicellulase endo-1,3- $\beta$ -xylanase	

**Rujukan: Senarai mikroorganisma yang diluluskan oleh FDA dan Association of American Feed Control Officials (AAFCO)**



**MIKROORGANISMA YANG DIBENARKAN UNTUK DIGUNAKAN DI DALAM MAKANAN HAIWAN**

<i>Aspergillus niger</i>	<i>Lactobacillus cellobiosus</i>
<i>Aspergillus oryzae</i>	<i>Lactobacillus curvatus</i>
<i>Bacillus coagulans</i>	<i>Lactobacillus delbruekii</i>
<i>Bacillus lentus</i>	<i>Lactobacillus fermentum</i>
<i>Bacillus licheniformis</i>	<i>Lactobacillus helveticus</i>
<i>Bacillus pumilus</i>	<i>Lactobacillus lactis</i>
<i>Bacillus subtilis</i>	<i>Lactobacillus plantarum</i>
<i>Bacteroides amylophilus</i>	<i>Lactobacillus euterii</i>
<i>Bacteroides capillosus</i>	<i>Leuconostoc mesenteroides</i>
<i>Bacteroides ruminicola</i>	<i>Pediococcus cerevisiae (damnosus)</i>
<i>Bacteroides suis</i>	<i>Pediococcus pentosaceus</i>
<i>Bifidobacterium adolescentis</i>	<i>Propionibacterium freudenreichii</i>
<i>Bifidobacterium animalis</i>	<i>Propionibacterium shermanii</i>
<i>Bifidobacterium bifidum</i>	<i>Saccharomyces cerevisiae</i>
<i>Bifidobacterium infantis</i>	<i>Streptococcus cremoris</i>
<i>Bifidobacterium longum</i>	<i>Streptococcus diacetylactis</i>
<i>Bifidobacterium thermophilum</i>	<i>Streptococcus faecium</i>
<i>Lactobacillus brevis</i>	<i>Streptococcus intermedius</i>
<i>Lactobacillus bulgaricus</i>	<i>Streptococcus lactis</i>
<i>Lactobacillus cesei</i>	<i>Streptococcus thermophilus</i>

**Rujukan: Senarai mikroorganisma yang diluluskan oleh FDA dan Association of American Feed Control Officials (AAFCO)**