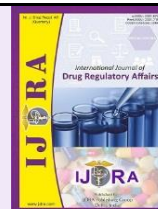




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Review Article

Current Regulatory requirements for registration of nutraceuticals in ASEAN

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Abstract

Nutraceuticals are bioactive or natural chemical components that are been marketed all over the world. It claims to be disease preventing along with health promoting product with some of the medicinal properties. It is categorized as vitamin, mineral, animal product and health supplement. Nutraceuticals has the major advantage over the medicines as they avoid the adverse effects that are caused by drugs. Nutraceutical market is expanding day by day and the claim for the product is enlarging. Users are looking for alternatives for the prescribed medicines as well as the health product that will supplement dietary intake on daily basis. Different countries classified products into various categories depending upon their health claim. In Association of South East Asian Nations (ASEAN) the Asian Alliance of Health Supplement Association (AAHSA) regulates the responsibilities to ensure that the nutraceuticals before marketing are safe.

Keywords: ASEAN, Asian Alliance of Health Supplement Association (AAHSA), nutraceuticals, health supplements.

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1. Introduction

In modern years, a new prototype of diet health is emerging. The new lifestyle adopted these days has changed the basic habits of food. Utilization of junk food is increasing day by day leading to a number of various diseases, occurred due to improper nutrition. Principal cause of most of the death in various country is heart disease followed by cancer, arthritis etc. consumers are approaching to the alternative beneficial product.

Nutraceutical was termed from “Nutrition” and “Pharmaceutical”. Nutraceutical are the food or part of food that has health benefits including the prevention

and treatment of various diseases, improving health, delaying the aging process or increasing life expectancy. Concept of nutraceutical arose where diet was higher rated by consumers then exercise in order to achieve good health.

It includes vitamins, minerals, herbs and other botanical amino acid, dietary substances, essential oils, natural substance of plant and animal origin as a supplementary diet for human use. These nutritional supplements are limited to the products which are to be administered orally in the form of tablet, capsule, granules, powder, liquid or soft gels. (1-3)

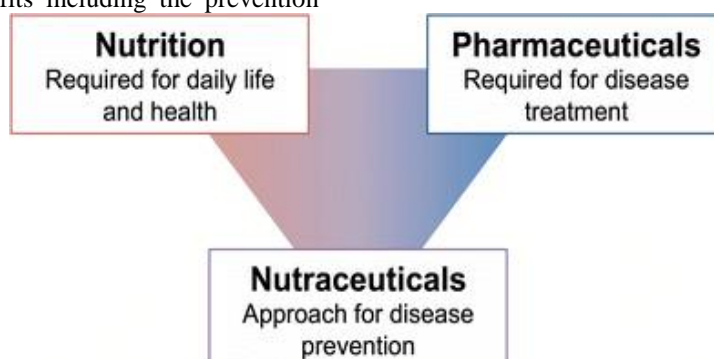


Figure 1. Fundamental role of nutraceutical

2. Classification of nutraceuticals

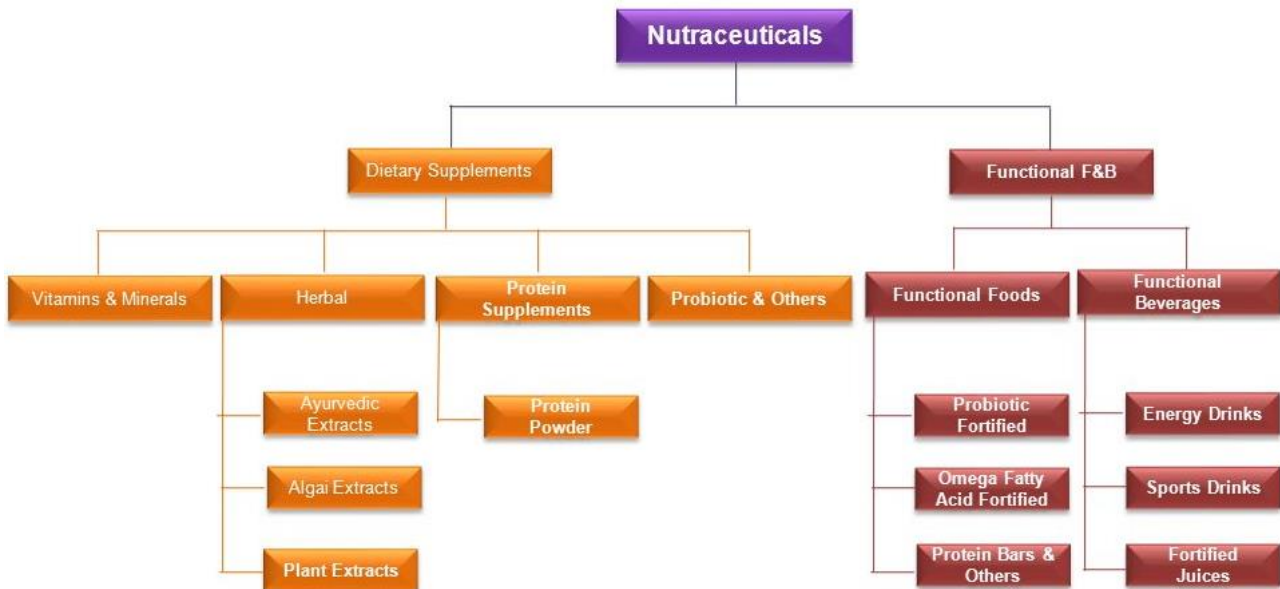


Figure 2. Classification of Nutraceuticals.

Nutraceutical ingredients market can also be further classified as:

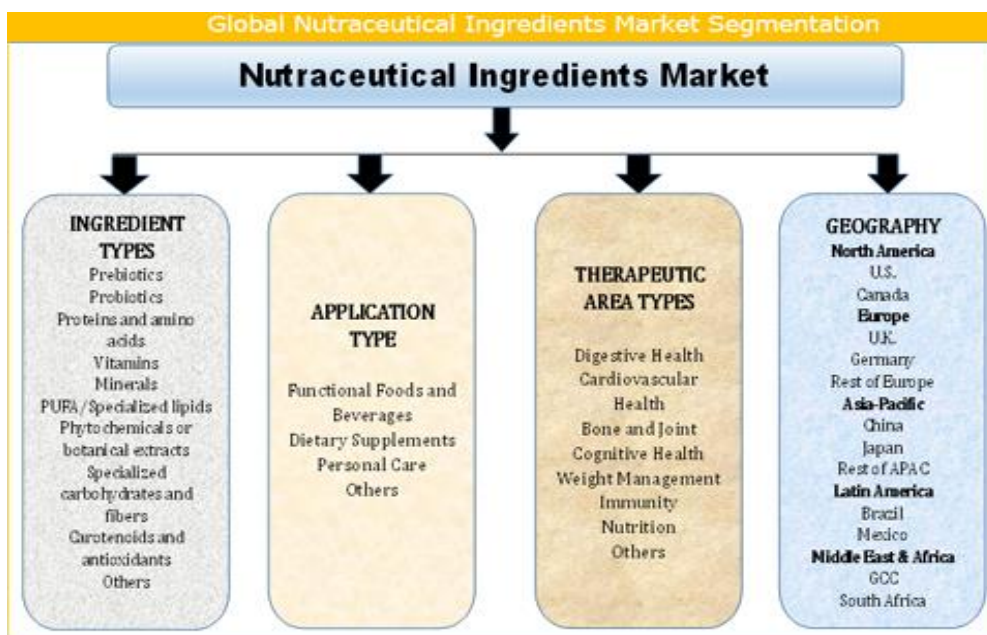


Figure 3. Classification of nutraceutical ingredient market

3. Nutraceuticals in ASEAN countries (4-8)

The Association of Southeast Asian Nations (ASEAN) came into existence on 8th of August 1967. Member countries within ASEAN region are Myanmar, Cambodia, Indonesia, Brunei Darussalam, Lao PDR, Philippines, Thailand, Singapore, Malaysia, Vietnam and Singapore.

The terms Food Supplements, Dietary Supplements and Health Supplements are used to refer to the category in ASEAN. Amongst the ASEAN countries, “Food Supplements” term is used by 3 countries Indonesia, Philippines, and Vietnam. “Dietary Supplement” term is used by 3 countries Myanmar, Philippines and Thailand. While “Health Supplements” term is used by 4

countries Brunei Darussalam, Cambodia, Malaysia and Singapore. Currently each ASEAN member have distinct standards and requirements health supplement level and ingredients.

ASEAN Alliance of Health Supplement Association (AAHSA) represents the health supplements industry in the member countries. It includes 7 National level Health Supplement Association-

- i. Indonesia- Association Pengusaha Suplemen Kesehatan Indonesia.
- ii. Philippines- Health and Dietary Supplements Association of Philippines.
- iii. Vietnam- Vietnam Association of Functional Foods.

- iv. Thailand- Health Food and Supplement Association.
- v. Brunei Darussalam- Health and Cosmetic Association.
- vi. Malaysia- Malaysian Dietary Supplements Association.
- vii. Singapore- Health Supplements Industry Association of Singapore.



Figure 4. Map of member countries in ASEAN

A Health Supplement is defined as any product that is used as diet supplement as well as to maintain or upgrade or strengthen the healthy function of the human body. It may contain one or more than one combinations of mentioned below-

- a) Vitamins, minerals, fatty acids, amino acid, enzymes, bioactive substance or probiotic.
- b) Natural sources derived including mineral, animal and plant materials in the form of metabolites, extracts or concentrates.

- c) Synthetic sources of ingredients listed in a or b can only be used if safety has been proven.

It is presented in small unit doses in the dosage form such as capsules, tablet, powders, liquid. It will not include any sterile preparation like injectables or eye drops.

4. Regulatory requirements of nutraceuticals in ASEAN (9-15)

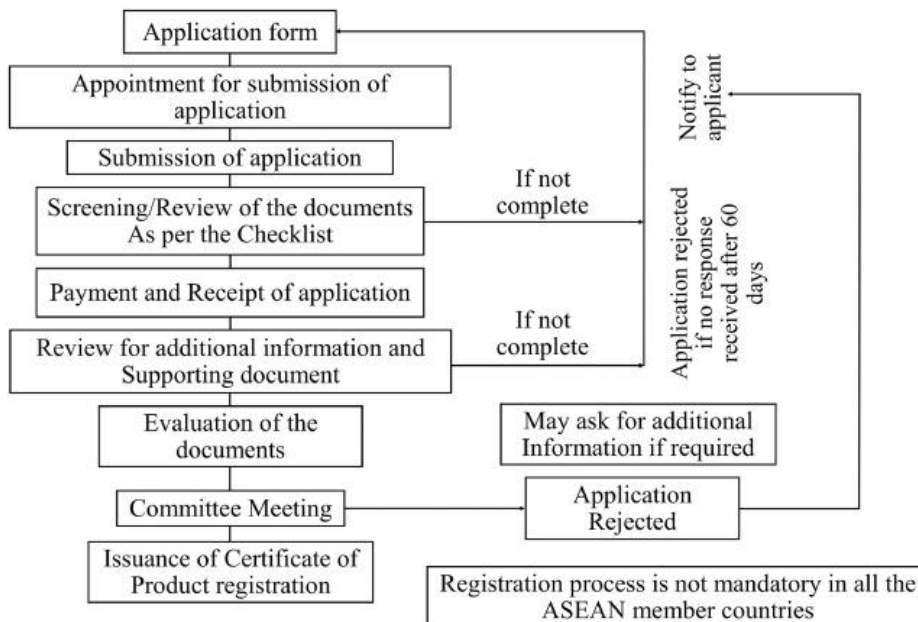


Figure 5. Flowchart for registration process in ASEAN

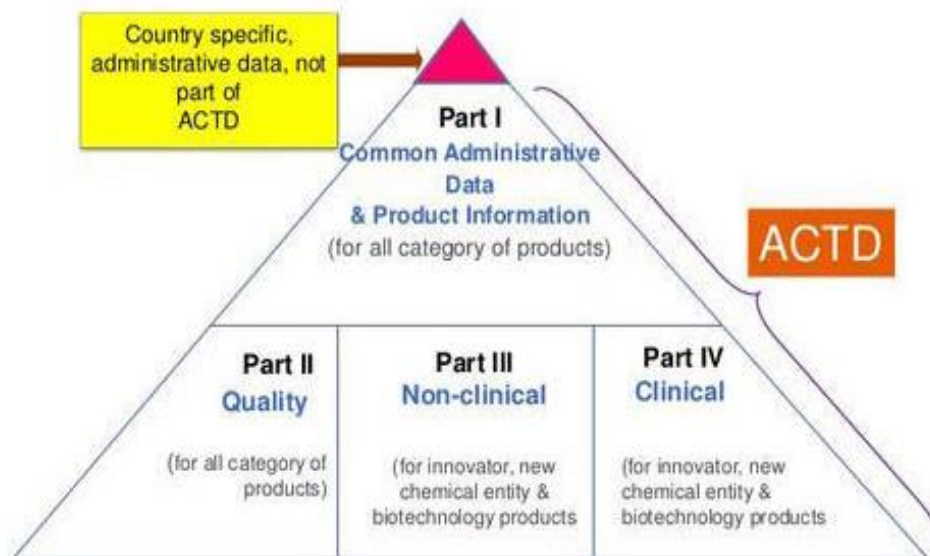


Figure 6. ASEAN Common Technical Dossier (ACTD)

ASEAN Common Technical Dossier (ACTD) is a guideline of the agreed upon common format for the preparation of an organized CTD application that will be registered to ASEAN regulatory authorities for the registration of pharmaceuticals intended for human use. ACTD guidelines will reduce the resources and time required to compile the registration application and will assist the arrangement of submission of electronic document.

The overall dossier is organized in following 4 parts-

Part I- Table of contents, Administrative data and Product information

Section A- Introduction

Section B- Overall ACTD table of contents

Section C- Documents required for registration (for example: application forms, labeling, product data sheet, prescribing information)

Part II- Quality document

Section A-Table of contents

Section B- Quality overall summary

Section C- Body of data

Part III- Nonclinical document

Section A- Table of content

Section B- Non clinical overview

Section C- Non clinical tabulated and written summaries

- a) Table of Contents
- b) Pharmacology
- c) Pharmacokinetics
- d) Toxicology

Section D- Non clinical study reports

- a) Table of Contents
- b) Pharmacology

c) Pharmacokinetics

d) Toxicology

Part IV- Clinical document

Section A- Table of Contents Section

Section B- Clinical Overview Section

Section C- Clinical Summary

- a) Summary of Biopharmaceutics and Associated Analytical Methods
- b) Summary of Clinical Pharmacology Studies
- c) Summary of Clinical Efficacy
- d) Summary of Clinical Safety
- e) Synopses of Individual Studies

Section D- Tabular Listing of All Clinical Studies

Section E- Clinical Study Reports

Section F- List of Key Literature References

Administrative Data requirements

Common administrative data requirement that are essential for the registration of the nutraceuticals/health supplements in ASEAN countries are:-

- Application form.
- Manufacture license copy.
- Power of attorney.
- For manufacturing facility in the country, Good Manufacturing Process (GMP) certificate.
- Certificate of free sale issued in a country.
- Product information, must include drug interactions, usage indications, dosage, management of overdose, shelf life and storage conditions.
- Language to be inserted should be English along with regional language.
- Detailed manufacturing process along with In Process Quality Control (IPQC) procedure.
- Stability.

- Quality and Safety specification.
- Certificate of Analysis, active ingredients and excipients of 3 samples.

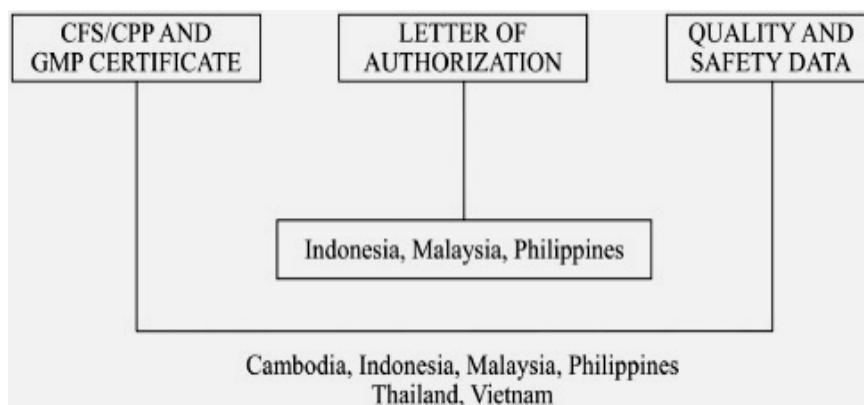


Figure 7. Administrative data requirement as per the countries in ASEAN

Table 1. Regulation of Governing body in ASEAN

Country	Governing body	Regulation
Indonesia	National Agency of Drug and Food control of Republic of Indonesia (NADFC)	Food law no 18/2012 regulates all food and food product that originates from biological source
Philippines	Bureau of Food and Drugs (BFAD)	As per administrative order no 37s, 1979 food products are registered with BFAD
Vietnam	Regulated by 3 different ministers- Ministry of Health (MOH) Ministry of Agriculture and Rural Development (MARD) Ministry of Industry and Trade (MOIT)	Decree no 38/2012/NO_CP provides guidance to MARD, MOIT, MOH
Myanmar	Myanmar Food and Drug Administration	Mandatory testing of food product before marketing
Thailand	Thai Food and Drug Administration of Ministry of Public Health (MOPH)	Food Act B.E. 2522(1979) controls import and export of food products for sale
Brunei Darussalam	Brunei Darussalam Medicines Control Authority (BDMCA)	Do not require licensing or pre-market authorization from BDMCA
Cambodia	Department of Drug and Food (DDF) under Ministry of Health	Safety, efficacy, quality of drug and efficacy of food and cosmetic
Malaysia	Food Safety and Quality Division of Ministry of Health Malaysia (FSQD)	Mandatory registering the health supplements before marketing
Singapore	Singapore Food Agency (SFA)	Health Supplements are not subjected to approval and licensing by HAS for importation, manufacture and sales

Application form required for registration

Table 2. Form requirements for registration process in ASEAN

Form no	Document
03b	Form of Detailed written information of products for functional food, food fortified with nutrients
03c	Form of Detailed written information of products for tools, materials for packaging, food containers
04	Form of Plan of quality control
05	Form of Application for reissuance of Receipt of written publication of regulation conformity or written certification of publication of conformity with food safety regulations
06	Form of list of the facilities producing, trading food registering for export into Vietnam
07	Information on management system and capacity of controlling food safety of the competent agencies of the exporting countries
08	Summary of information on the conditions to ensure food safety of the producing, trading facilities

Table 3. List of health supplements to be registered in various countries

Health Supplements	Countries
Vitamin	Brunei Darussalam, Indonesia, Cambodia, Lao PDR, Malaysia, Philippines, Singapore, Thai,

	Vietnam
Mineral	Brunei Darussalam, Indonesia, Cambodia, Lao PDR, Malaysia, Philippines, Singapore, Thai, Vietnam, Myanmar
Amino acid	Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Singapore, Thailand
Plants, Animals	Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Singapore, Thailand, Vietnam
Metabolites	Indonesia, Lao PDR, Thailand
Enzymes	Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia
Concentrate	Brunei Darussalam, Indonesia, Malaysia, Thailand

Table 4. Contents claimed by the country

Country	Contents claimed
Indonesia	Five core nutrients (energy, fat, protein, CHO and sodium and nutrients. Nutrients that are mandatory under specific requirements; energy from fat, saturated fat, trans fat, cholesterol, dietary fiber sugar; vitamin A, vitamin C, calcium and iron.
Malaysia	Four core nutrients (energy, fat, protein and CHO).
Philippines	Four core nutrients (energy, fat, protein and CHO). Nutrients to be declared for fortificants of fortified food.
Singapore	Four core nutrients (energy, fat, protein and CHO).
Thailand	Four core nutrients (energy, fat, protein and CHO), saturated fat, and cholesterol, dietary fiber, sugar, sodium, vitamin A, B1, B2, calcium, iron and nutrients. Simplified format includes the four core nutrients as well as sugar and sodium.

Table 5. Purpose for registration of health supplements in various countries

Purpose	Registration required in countries
Support or maintain healthy function of body	Brunei Darussalam, Singapore
Supplement normal diet	Cambodia, Lao PDR, Indonesia, Malaysia, Singapore
Supplement or fortifying ordinary or usual diet	Philippines
Enhance body function	Vietnam
Improve and maintain healthy condition	Cambodia, Lao PDR
Use for the patients under dietaru regimes	Cambodia
Improve health	Thailand

Timeline for Evaluation**Table 6.** Timeline for evaluation

Country	Timeline
Brunei Darussalam	NA
Cambodia	6-12 months
Lao PDR	NA
Malaysia	6 months
Singapore	2-3 months
Myanmar	NA
Thailand	6 months
Indonesia	2-3 months
Philippines	2-3 months
Vietnam	2-3 months

Pre-marketing Evaluation**Table 7.** Technical requirement of data in various countries

Content	Applicable countries
GMP	Cambodia, Indonesia Malaysia, Philippines, Vietnam
Formula	Brunei Darussalam, Cambodia, Indonesia, Malaysia, Philippines, Thailand, Vietnam
Raw material specification	Brunei Darussalam, Cambodia, Indonesia, Malaysia, Philippines, Thailand, Vietnam
Manufacturing process	Cambodia , Indonesia, Malaysia, Philippines, Thailand, Vietnam
Finished product specification	Cambodia , Indonesia, Malaysia, Philippines, Thailand, Vietnam
Stability study	Indonesia, Malaysia, Philippines, Vietnam
Water content	Indonesia, Philippines

Disintegration time	Cambodia, Indonesia, Malaysia, Philippines, Vietnam
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Labeling requirements**Table 8.** Labeling data requirements of various countries

Country	Labeling requirements
Brunei Darussalam	Product name, Composition, Dosage form, Administration and Doses, Packaged size, Manufacturer name and Address, Registration number, Batch No, Side effects, Contraindication, Precaution, Storage condition.
Cambodia	Product name, Composition, Dosage form, Administration and Doses, Packaged size, Manufacturer name and Address, Batch No, Expiry, Side effects, Contraindication, Precaution, Storage condition.
Indonesia	Product name, Composition, Dosage form, Administration and Doses, Packaged size, Manufacturer name and Address, Distributor name and Address, Registration number, Batch No, Expiry, Side effects, Contraindication, Precaution, Storage condition.
Malaysia	Product name, Composition, Dosage form, Administration and Doses, Packaged size, Manufacturer name and Address, Registration number, Batch No, Expiry, Side effects, Contraindication, Precaution, Storage condition.
Philippines	Product name, Composition, Dosage form, Administration and Doses, Packaged size, Manufacturer name and Address, Distributor name and Address, Batch No, Expiry, Side effects, Contraindication, Precaution, Storage condition.
Thailand	Product name, Composition, Administration and Doses, Packaged size, Manufacturer name and Address, Distributor name and Address, Registration number, Expiry, Contraindication, Precaution, Storage condition.
Vietnam	Product name, Composition, Dosage form, Administration and Doses, Packaged size, Manufacturer name and Address, Distributor name and Address, Registration number, Batch No, Expiry, Side effects, Contraindication, Precaution, Storage condition.

Post-marketing control


It includes:

- I. Monitoring of labeling, packing and advertisement.
- II. Sampling and label test.
- III. Monitoring of adverse effects.
- IV. Inspection of manufacturer and distributor.
- V. Post marketing surveillance.

Table 9. Post marketing control

Country	Monitoring of labeling, packing and advertisement	Sampling and label test	Monitoring of adverse effects	Inspection of manufacturer and distributor	Post marketing surveillance
Brunei Darussalam	-	R	-	R	R
Cambodia	-	-	-	-	-
Malaysia	R	R	R	R	R
Singapore	R	R	R	CPM	R
Lao PDR, Myanmar	-	-	-	-	-
Thailand	R	-	R	R	R
Indonesia, Philippines	R	R	R	R	R
Vietnam	R	-	R	-	R

5. Marketed nutraceuticals in ASEAN

Marketed Product	Brand name	Manufacturer	Category	Formulated to support
	Centrum Silver	Wyeth Pharmaceutical	Multivitamin and Multimineral	Healthy heart Good eyesight Immunity Strong bones and muscle Healthy skin and nerves

	Blackmores Women's Vitality Multivitamin	Blackmores	Multivitamin	Body metabolism Maintains healthy heart Immune system Reduces mental fatigue Relieves tiredness Reduces risk of cell damage
	Berocca Orange Vitamin Effervescent	BAYER	Vitamin and Mineral	Enhances mental and physical performance Improve alertness and concentration power Reduces tiredness
	Enervon	UNILAB, INC	Vitamin B Complex and Vitamin C	Helps promote increased energy Enhance immunity system Treatment of Vit B complex and Vit C deficiencies
	Kirkland Signature Children's Complete Multivitamin Gummies	Kirkland	Multivitamin	Enhances child immunity, brain function and physical growth
	Nordic natural Pre Natal DHA Multivitamin	Nordic Naturals	Multivitamin	Natural omega-3s Mood support Prenatal DHA support Brain development in babies during pregnancy

6. Conclusion

Nutraceuticals have proven health benefits as well as their consumption will defend disease and also will allow mankind to maintain their overall good health. Health Professional, Regulatory Toxicologist and nutritionist should combine efforts and plan significant regulation which will impart the ultimate health. For this, it is required to execute a regulatory body, to standardize nutraceutical industry.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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