



INTABIOTECH

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# FerriSTAT™

Bio-Available Chelated Iron in the control of  
Iron-Deficiency Situations.

Intabiotech SL is a wholly owned Subsidiary of The ND Pharma & Biotech Co.

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## Fighting Anemia

Iron deficiency status, denominated clinically as anemia, represents one of the major health concerns to world population, no matter if is in the developing countries, the so-called third world of industrialized countries. Anemic status affects more than 1.9 billion people worldwide. Reduced iron blood levels and tissue deposits of such metal, causes several symptoms and health conditions that in certain cases as during pregnancy, are associated with incremental risk of mortality. During childhood and infancy, iron deficiencies are associated to significant loss of cognitive (neurological) abilities and a lack of resistance against infections, between other major and minor symptoms and signs.

## Iron deficiency and Anemia

Iron should be present in almost human cells and is a component of major importance within the red blood cells to let them to carry oxygen to all tissues and organs of the body.

Iron deficiency affects multiple functions. In cases of severe deficiency, it results in anemia. Iron deficiency is the most prevalent nutrition deficiency in the world. As estimated by the World Health Organization (WHO) 40% of the world's population is suffering different anemic status by one or another causes.

It is responsible for approximately 20.000 deaths among children under 5 years of age. Additionally iron-deficiency anemia in pregnancy is a risk factor for maternal mortality. 115,000 deaths per year from maternal causes among women of childbearing age have been attributed to iron deficiency. According to a World Health Organization (WHO) review of nationally representative surveys from 1993 to 2005, 42% of pregnant women and 47% of preschool children worldwide could have anemia. Iron deficiency has its greatest impact on the health and well-being of pre-scholars and women of childbearing age, though it may also affect other population groups.



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Sustained anemic status results in lower work productivity in workers, decreased intelligence levels and adaptative capacities in children, and greater risk of lower birth weight babies in pregnant women, with all associated risk during time anemic status is not rectified clinically.

## FerriSTAT™ for food fortification

The most efficient way of prevention and sometimes fighting against iron deficiency anemia is throughout the fortification of food products with a form of iron that is readily absorbed by the body.

Our Ferric Sodium EDTA, **FerriSTAT™** that is a developed form chelated iron, has demonstrated to be both safe and effective in reducing iron deficiency through its superior bioavailability and body absorption, especially in diets where the inherent compounds inhibit iron absorption, as it happens in the actual diets rich in phytates (phytic acid) that naturally sequester iron within the intestine.

The main challenge in iron supplementation and fortifications sources is to avoid undesirable color and flavor changes that other forms of iron imposed of the fortified foods or formulas where it's applied.

Another important question resides in the level of efficacy and the effectiveness of incorporated iron absorption within the body at cellular levels.

**FerriSTAT™** has strongly appreciated differences with other iron-supplementation forms thanks to its special form of chelated iron that presents benefits:

- Well-soluble in water
- No metallic taste or aftertaste to metal
- No teeth staining and no aggressive to enamel
- No rancidity, NO Gastric Discomfort
- Highly effective, even in presence of phytates
- Is the most efficient way of fighting anemia in developing and industrialized countries.
- Inert with other ingredients, compounds and elaborations.
- Up to 4 times more bioavailable than average forms of Iron.

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## Guidelines for Use

Usage guidelines established under JECFA has stated that the maximum ADI (Acceptable Daily Intake) for EDTA is 1.9 mg/day/kg of bodyweight (BW), which equates for **FerriSTAT™** chelated iron to be 2.8 mg/day/kg BW. Ferric Sodium EDTA is at least 3 to 4 times more bioavailable than comparable sources of iron such as ferrous sulfate or fumarate, which formulators should take into consideration. Research literature available.

## The Science behind our product

Poor or deficient absorption of iron, especially from diets rich in cereals and legumes or foods derived or processed from them, is one of the main factors contributing to the high prevalence of iron (Fe) deficiency disorders in developed societies. In developing and other countries, the need for fortification exists for other reasons, mostly related to a basic general diet very poor in this element.

Increasing the intake of foods that promote the absorption of iron (Fe) from diets containing low bioavailability iron is a joint and/or complementary option to the fortification of certain foods and food raw materials with high bioavailability profile/gradient (Fe) or absorption and use by the body. ND Pharma & Biotech, through its research teams, has been promoting for years the use of Digestion Resistant Oligosaccharides (DROS), which selectively stimulate the growth and multiplication of certain species of bacteria in the digestive system, essentially in the colon, which are beneficial to the human body by improving, among others, the capacity of the mucosa of this part of the intestine to work in favor of the absorption of certain nutrients or elements such as Iron (Fe).

This option, commercially available in certain formulations developed by our company, allows that in a natural and biological way, the fermentation of prebiotics by the natural microflora present in the colon causes decrease



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in the pH of the contents of the intestinal lumen, promoting the reduction from the original Fe (III) or Fe<sub>3</sub> into Fe (II) or Fe<sub>2</sub>, stimulating the proliferation of epithelial cells that expand the surface of the absorption area, potentially stimulating the expression of mineral transport proteins in these epithelial cells.

The mechanisms of promotion of the absorption of nutrients by these elements (DROS), are a milestone marked by our researchers in the care and prevention of certain diseases and disorders related to intimate aspects of the capacity or inability, as in the case of intestinal absorption of certain elements, their prevention and the attenuation, treatments or cure, that can be developed for these disorders, in each situation posed.

## Fortification is Science in Action

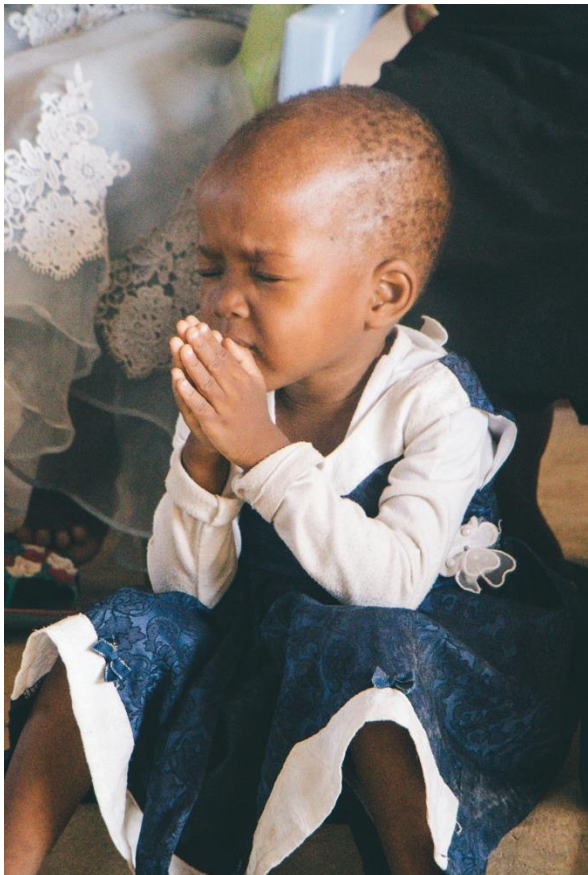
Balancing the components and characteristics of foods with their nutritional value and properties is a science itself. Since our inception as a company dedicated to improving people's lives, ND Pharma & Biotech Co. has collaborated and participated in multiple research projects to support the development of strategies, methods and techniques for fortification of foods and food raw materials to achieve levels of development and innovation never achieved before. Our resources in this area are focused on achieving those scientific, technical and/or technological advances that allow this branch of science to be a synthesis of knowledge and experience to achieve the beneficial impact that is intended to have on the health and well-being of human beings as food consumers.

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## Food Fortification

Our company bases its food fortification and improvement strategies on a comprehensive treatment of precise and verified information that includes everything from the application of the latest manufacturing and product production technologies to the exact evaluation of the nutritional requirements of the different population groups involved, the specific food and nutrition needs, the status and economic, social and other barriers that prevent or hinder access to certain foods, as well as the current geopolitical reality of these population groups, the industries that supply them and the foods they consume, as well as their quality, safety, suitability and nature. Technological and industrial processes also occupy an important part of the evaluation and research documentation system used by our scientists, technicians, producers and salespeople to achieve the established goals.



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## Main Applications

Our Product can be used in the vast majority of food and beverage products that may be in need of fortification since it presents a great stability and easiness of management. It results idoneous for mixing with other powder as premixes, to pour and mix into beverages and other dry goods. It's also usable in emulsions as cream, chocolate, etc.



### Wheat, Maize and Flour-Based Products

Bread, pasta, crackers, many cakes, and many other foods are made using flour. From cookies to all kind of bakery and confectionery flour-based foods are between the most consumed in the world. Biscuits, instant noodles and cereals for breakfast can be fortified with our product. It may be also added to instant powder for milkshakes, as it happens with those created to savory fluids for children and elderly, special nutrition formulas of vanilla, strawberry, chocolate, etc.



### Drinks and Beverages

Juice, Hot Chocolate, Energy Drinks and Formulas, Coffee, Tea, Milkshakes, Smoothies, Espresso, Sour, Special Waters and Sports Foods, Diet Sodas, etc., all can be benefited from being fortified or supplemented with our product.

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### Supplements and Special Foods

Vitamins: such as multivitamins or individual vitamins like vitamin D and biotin.

Minerals: such as calcium, magnesium, and other iron presentations

Botanicals or herbs: such as echinacea and ginger

Botanical compounds: such as caffeine and curcumin

Amino acids: such as tryptophan and glutamine

Live microbials: commonly referred to as "probiotics", all those are candidates to incorporate our product into their formulations.



### Condiments, Sauces & Dressings

Barbecue, Ketchup, Aioli, Vinegar, Salsas, Fish Sauce, Brown Sauce, Creamy ranch dressing, Hot Sauce, Mustard, Relish, Cheese sauce, Balsamic vinegar, Sweet and chili sauce, Chimichurri, Gochujang, Mayonnaise, Tomato Sauce, Soy Sauce, Pesto, Chutney, Tartar, Cocktail sauce, Holland sauce, Cranberry sauce, etc. are different varieties of sauces that can be fortified with our product, in special those oriented to be consumed in certain countries.

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## Product Overview

**FerriSTAT™** results ideal for use in foods and has been recommended by WHO as the only suitable iron supplement for massive fortification of high phytate cereal flours and all kind of condiments and sauces as soy and fish.

Ingredient has been officially approved by JECFA, FDA and the EFSA in the EU.

Manufactured under specifications outlined in the Monograph for food-grade EDTA Ferric Sodium Salt 8<sup>th</sup> version of JECFA.



## Locations

### Registered Address

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## We're Intabiotech

Intabiotech is a leading company in S&S (Sourcing & Supply) that connects companies from all over the world with us and with each other, both producers and consumers of products and services in the most varied fields from Life Sciences to Industrial sectors. Intabiotech is a commercial company that represents products and brands to provide solutions to different businesses and companies through its network of agents, distributors, partners, etc., very dedicated people who strive every day to bring our products and solutions to everyone. those who need or demand them. With a portfolio of more than 300,000 product references from Biopharmaceuticals, research, innovations in Food and Nutrition, both human and animal, advanced therapies or consumer materials, we are leaders in providing Sourcing & Supply solutions for all and each of the needs. Contact us and discover our potential and how we can be useful to your company or business.

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