

# LIPOFER<sup>®</sup>

## TASTELESS AND NON PROOXIDATIVE SOURCE OF IRON



REDUCED METALLIC TASTE

CONTROLLED INTERACTIONS WITH OTHER COMPONENTS

HIGHLY BIOAVAILABLE IRON

NO DIGESTIVE TRACT IRRITATION

### DESCRIPTION

**LIPOFER<sup>®</sup>** is a water dispersible micronized source of iron that has been microencapsulated to enhance iron absorption and to reduce undesirable organoleptic attributes, thus enabling the enrichment of various types of foods and dietary supplements with this essential nutrient.

### COMPOSITION

Identity Preserved Corn Starch, Iron Pyrophosphate, Sunflower Lecithin.

### A NUTRITIONAL VIEW

Iron is an essential constituent of the body, being necessary for haemoglobin formation and for the oxidative processes of living tissues. Iron found in the body is either actively in use or in storage. The amount of iron in storage varies with individual conditions and dietary intake.

According to the World Health Organization (WHO), iron deficiency is recognized as the most common and widespread nutritional

disorder in the world. It affects a large number of children and women in developing countries and is the only nutrient deficiency still prevalent in industrialized countries.

Iron fortification is generally considered the best approach for preventing or eradicating iron deficiency; however the chemical reactivity of iron species and their affinity to various components of food systems often result in the generation of discoloration or objectionable flavors as well as in reduced bioavailability of the mineral.

Microencapsulation is currently considered the leading solution for overcoming these limitations via protecting sensitive nutrients and actives throughout processing of fortified foods as well as their shelf life.

**LIPOFER<sup>®</sup>** is a microencapsulated source of iron, which is designed to reduce iron's reactivity while improving its bioavailability.

### APPLICATIONS

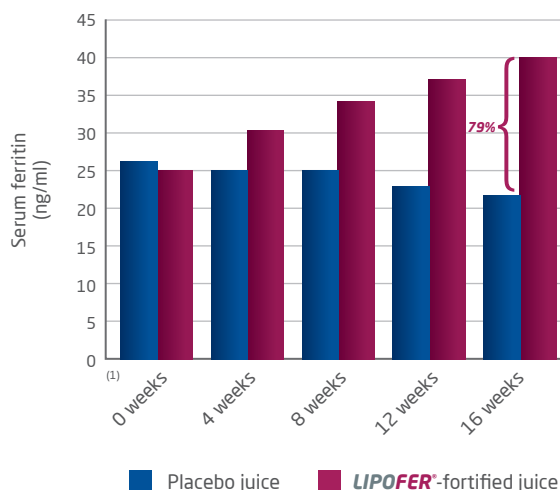
Milk and dairy products, dietary supplements, bakery products, confections, candies, cereal bars, beverages, etc.

## IN VIVO EFFICACY

### 1. EFFICACY OF LIPOFER® IN FORTIFIED FRUIT JUICE

The influence of consuming fruit juice fortified with **LIPOFER®** on iron status was determined in a double-blind study controlled by placebo in 130 menstruating women with low iron stores, aged 18 to 35 years.

Subjects were randomized into two groups: placebo (P) and fortified (F) and consumed as a supplement to their usual diet, 500 ml/day of a placebo fruit juice or a juice fortified with **LIPOFER®** respectively for 16 weeks. The fortified juice provided 18 mg of iron.



**LIPOFER®-FORTIFIED FRUIT JUICE CONSUMPTION SIGNIFICANTLY IMPROVED THE IRON STATUS**

Ferritin was higher in the fortified group after 4 weeks and became about 80% higher after 16 weeks.

At baseline and monthly blood samples from the volunteers were collected and the concentration of serum ferritin was determined by the Modular Analytics Serum Work Area analyser.

### 2. EFFICACY OF LIPOFER® IN FORTIFIED MEAT PATE

A three-way, randomized, crossover, double-blind postprandial test was carried out on iron-deficient women, aged 21 to 25 years, in order to compare the iron bioavailability of three different meat pate products, enriched with ferrous sulphate, **LIPOFER®** or **LIPOFER®** plus a haemoglobin-based meat pigment respectively. Test meals consisted of 80 grams of the enriched meat pate products, containing 19 mg of total iron (including 15 mg of iron from the test fortificants).

Blood samples were taken at baseline and each hour for 6 hours after eating the meat pate, and serum iron was determined by a Modular Analytics Serum Work Area analyser. This study was conducted by the Spanish Council for Scientific Research (CSIC).

**SERUM IRON CONCENTRATION EVOLUTION DURING THE POSTPRANDIAL STUDY WAS SIMILAR WITH THE THREE MEALS**

Results showed that the consumption of meat pate fortified with **LIPOFER®** can be part of a dietary strategy for preventing iron deficiency in humans.

(1) Reference: British Journal of Nutrition (2010), page 1-10