FUNCTIONAL FOODS ROUNDUP

The physiological impact of food ingredients on human body cells and the rise and rise of protein fortification are some of the new developments in functional foods.

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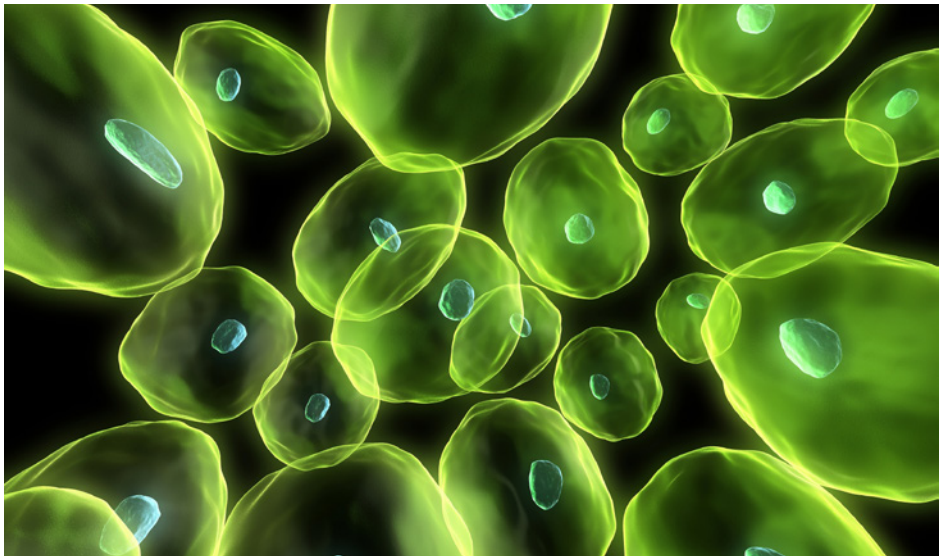
Nestlé to test effects of health foods on human body cells

The worldwide market for health foods and beverages is forecast to grow by 22 per cent from US$772 billion in 2013 to US$944 billion in 2018,[1] partly driven by the rising incidence of obesity, heart diseases, cancers and other lifestyle-related disease.

Food companies around the world are hoping to capture a share of this market but the world's largest food and beverage company, Nestlé, is going one step further – to develop an understanding of the physiological functions of health foods and ingredients on human body cells.



In a partnership forged with Wisconsin-based Cellular Dynamics International (CDI) announced in January 2014, Nestlé will obtain human brain and liver cells and study how nutrients found in foods affect them.

According to the CDI's website, its iCell® product line includes cardiomyocytes, neurons, hepatocytes, and endothelial cells, with numerous other cell types under development. The company's MyCell® Products are cell products manufactured from donor samples using iPSC technology to make stem cells or differentiated cells from any individual, including those with diseases of interest.

Although its customers include most of the major pharmaceutical companies, Nestlé is the first food-oriented company interested in its products. According to the Nestlé website, CDI cell products are obtained using a pioneering method using adult human cells that have been "reverse-engineered" to behave like human stem cells. Nestlé has clarified that it does not do any research using human embryonic stem cells.

Nestlé's research will provide the scientific basis for new nutritional solutions that could play an important role in helping to prevent or slow the onset of certain serious human health conditions, including obesity, diabetes and cognitive disorders.

According to reports, Nestlé scientists have begun investigating the interaction effects of fatty acids found in avocados and olive oil with neurons, with the aim of finding applications for ageing consumers.

Nestlé aims to use the insights from this research to develop nutritionally superior food products that it can market as having health benefits, ultimately hoping to find possible applications to assist in managing lifestyle diseases such as diabetes, obesity and Alzheimer's.

Although Nestlé competitors like Danone and Unilever have also been investing in nutrition or medically enhanced products through clinical trials using healthy food products, Nestlé is the first company so far to announce it is investigating the direct effect of nutrients on human body cells. No doubt sceptics will question the commercial benefits as they may not be realisable for several years.

Protein fortification

The global protein market for fortification can be divided into two often-competing categories: those derived from animals and those from plants. Due to the current high demand for protein claims, both markets are forecast to grow in the range of 5-6 per cent over the next five years.

According to Frost & Sullivan,[2] the global animal protein market in 2012 was 2.3 million tonnes, dominated by dairy-based ingredients, which represented nearly 50% of the global share of the animal protein segment.

Markets for dairy proteins are well established and dominated by sports and nutritional products.

The recent increase in the demand for milk-protein-based dairy ingredients such as whey protein concentrate (WPC), whey protein isolate (WPI), milk protein concentrates (MPC), milk protein isolates (MPI), and micellar casein concentrate (MCC), has pushed the ingredient prices to record levels.

Following dairy proteins, egg proteins make up the second largest ingredient in this market segment, which had a 40 per cent volume market share in 2012, due to its wider functionality in processed foods.

Another dominant protein in this segment is gelatin, which accounts for nearly 11 per cent of the global volume market share. Gelatine is predominantly used in dairy and confectionery products.

According to Frost & Sullivan, the global market for plant protein ingredients was approximately 1.7 million tonnes, dominated by soy-derived proteins with a market share of over 56 per cent.

Other major plant proteins include wheat and pea, where wheat protein is struggling to capture a market share due to the strong demand for soy protein.

Pea protein on the other hand is witnessing a healthy volume growth of nearly 10 per cent.

Other emerging plant-based protein ingredients include canola, potato, corn, rice and chia, which are likely to show a growth of more than five per cent in the next five years.

Although the market currently is dominated by animal proteins, recent price spikes may fuel the growth of cheaper plant proteins. However, it will be important to work on the sensory properties of plant proteins for them to be a successful replacement of animal proteins in foods and beverages.

It seems not only the more traditional products such as sports and nutritional products with protein claims have increased in number, the range of products that are now making protein claims has also increased. These now include frozen yoghurt, artisanal ice cream, soups, snacks, cereal bars and breakfast cereals.

New product launches

A notable recent launch is a snack product called Portable Protein Pack, P3 snack from Kraft Foods, which interestingly has presented three forms of high protein products. According to Kraft, the three-compartment snack pack delivers 13 grams of protein through Oscar Mayer Selects meat, Kraft Natural cheese, and Planters nuts.

Even Philadelphia cream cheese from Kraft has been given a protein revamp. Kraft recently introduced a Philadelphia 2x Protein Cream Cheese Spread, which will contain twice as much protein, at 4g per serving, as the regular variety of cream cheese.

Closer to home Sanitarium has recently launched a new higher protein Weet-Bix, claiming 11 grams of protein a serve, with the protein derived from soy.

Protein claims

In Australia, Standard 1.2.7 sets out new rules to regulate nutrition content claims and health claims on food labels and in advertisements. It replaces the existing transitional Health Claims Standard (Standard 1.1A.2) and brings together in one place the requirements for making nutrition content claims, health claims and related endorsements on food.

Food businesses now have less than two years (to January 2016) to make changes to ensure they are following the new rules. Under the Standard 1.2.7, if protein claim is made, the food needs to contain at least 5g protein per serving, and if a claim is made for good source of protein the food must contain at least 10g protein per serving.

References

1. http://business.time.com/2014/01/08/nestle-will-test-health-foods-on-human-brain-cells/
2. http://www.naturalproductsinsider.com/articles/2013/07/the-global-protein-ingredients-market.aspx

Ranjan Sharma compiles market intelligence newsletter "Functional Foods Weekly" (www.functionalfoods.biz).