Not everyone may know that there are more than 100 trillion bacteria which live on the surface of our skin, in our mouth and in our digestive tract. This huge, largely unexplored population is known as the microbiota. Its genetic makeup is also largely unexplored and only now is this so-called “second genome” beginning to be mapped. It would seem that the occurrence of imbalances in this bizarre ecosystem of which we are made can increase our predisposition to certain diseases. Many disorders of an autoimmune nature may in fact be due to a bias towards certain bacterial species in the microbiota. This is seen as a typically Western phenomenon, arising from a less varied and more standardized diet. The more our food intake is constituted by simple sugars and easily absorbed fats, the more we feed ourselves depriving our 100 trillion “lodgers” of nutrients. These bacteria are fond of the complex carbohydrates, low molecular weight nutrients and poorly absorbed polyphenols which are characteristic of a diet rich in vegetables and plant compounds. The role of the latter in keeping us in good health is essential.

Food therefore should be regarded, not only as nutrition but also as a source of well-being and health, as the boundaries between food and medicine become increasingly blurred. Until a few years ago it was widely held that food and medicine were to do with the treatment and prevention of diseases and that taste belonged instead to the realm of gastronomy. Clear evidence has emerged recently, however, that also chemoreception, which is the interaction of appetizing compounds with taste receptors, can be a source of inspiration for the discovery of new bioactive compounds. Edible plants are rich in low molecular weight compounds which can mirror the activity of synthetic drugs: one example is oleocanthal which is found in olive oil and has a similar low biological activity to the well-known non-steroidal anti-inflammatory drug Ibuprofen. Chemoreception can take its rightful place therefore as one of the new frontiers of pharmaceutical research, in the wake of the discovery of statins; these are synthetically similar to lovastatin which occurs in red yeast rice and are the most commercially successful class of drugs of all time.

One last, but by no means least, frontier in the science of nutrition is epigenetics: by this we mean the mainly dietary factors able to modulate genic expression through interaction with various components of chromatin, the form in which DNA is found in the nucleus of superior cells. There is ever increasing evidence that non-nutrients of plant origin, such as polyphenols, modulate genic expression. Although the biological effects of nutritional factors and botanical extracts have been demonstrated repeatedly in vitro (in concentrations which cannot be attained in vivo) epigenetic science sheds more realistic light on nutritional studies: prolonged lifelong exposure to physiological concentrations can reshape the epigenome in a cumulative manner due to the repeated effects of epigenetic mechanisms. It has been observed recently that by analysing epigenetic markers it is possible to predict whether a diet to control body weight will indeed work. Similar studies are also being extended to the way non-nutrients such as polyphenols of plant origin modulate the “second genome”, and the myriad tiny invisible guests which make up our microbiota. It is high time therefore that nutrigenomics be personalized and special attention given to research into those small non-nutrient molecules, which are characteristic of phyto-compounds and can induce modifications in our genic expression and in the flora of microorganisms that dwell within us. They may well also provide a source of inspiration for the discovery of new biologically active molecules.
INDENA’S SCIENTIFIC MISSION IN CONSUMER HEALTH

New Indena R&D product from edible plant has been presented at one of the most important congresses on botanicals in the USA. This presentation is part of Indena’s R&D work which focuses on identifying and providing a solid scientific background to phytonutrients.

Development of the ingredients is by optimizing their biological benefits which aim to give recipients an improving quality of life. An extract from *Phaseolus vulgaris* was introduced at the 12th Annual Oxford International Conference on the Science of Botanicals held in Mississippi in April 2013, by R&D Director Walter Cabri.

The high chemical characterization and the rigorous quality controls implemented allow the availability of Beanblock®, the double standardized extract able to modulate the metabolic process through regulation of blood sugar levels and appetite (Battezzati et al., *British Journal of Nutrition*, 2013).

MERIVA® AND EPIGENETICS

Rather than the chemical conversion of food to energy and body constituents in classic metabolism, food is now also seen as a conditioning environment that shapes the activity of the (epi)genome and determines stress adaptive responses, the metabolism, immune homeostasis and physiology of the body. The contribution of epigenetic modulations of dietary polyphenols to human well-being is one of the hottest research topics of the last five years.

Of the major epigenetic mechanisms, three particularly stand out: covalent DNA modification, histone protein modification and regulation by noncoding RNA. Many publications have indeed shown very recently that curcumin, the polyphenolic compound present in turmeric, is able to target the various epigenetic factors, such as histone deacetylase (HDAC), histone acetyltransferase (HAT), DNA methyltransferases (DNMTs), and microRNA (miRNA).

The curcumin phosphatidylcholine formulation, Meriva®, is also being evaluated as a nutriepigenetic agent.
INDENA: CUSTODIAN OF THE FOREST

Indena has become a “Custodian of the Forest” by supporting the project “Non-detriment Findings for Prunus africana (Hook.f.) Kalkman in Cameroon”, an excellent example of sustainable management and Corporate Social Responsibility (CSR). The precious bark of Prunus africana, better known as Pygeum africanum Hooker, yields an extract used to reduce the symptoms of benign prostatic hyperplasia. The project is supported by the International Tropical Timber Organisation (ITTO) in collaboration with the Convention on International Trade in Endangered Species of wild fauna and flora (CITES) and with two other European pharmaceutical companies particularly sensitive to the care and respect for the environment. The aim is to fully and constantly monitor the status of the species in Cameroon, to harvest the Prunus africana bark sustainably and to safeguard the ecosystem of which it is part without neglecting the economy of forest communities whose livelihood depends on this product.

“Custodians of the Forest” is also the title of a documentary film which relates the whole project. The video was shown during a dedicated workshop at the recent Conference of Parties organized by CITES and has been posted on the company’s YouTube channel. The pictures and stories told by people involved in the project provide living proof of the company’s regard for biodiversity and demonstrate the effectiveness and value of sustainable programs. Such programs are able to reconcile the interests of different countries, improving and certifying the quality of pharmaceutical products whilst successfully protecting the environment.

INDENA FOR ALL SEASONS

Just as nature changes and transforms, evolving with the passage of the seasons, and just as plant requirements vary according to the time of year, our skin also changes, evolving and acclimatizing with the calendar, revealing needs which echo the changing seasonal conditions.

“Four Seasons, a Year with Indena”, builds on the legacy of earlier cosmetic formulation work and pursues the quest to increase know-how in the formulation of natural extracts, this time however with a specific focus: to create sixteen formulas which reflect the very “seasonality” which affects our skin, just as in nature.

Four formulas combine important active ingredients to meet the need for protection or hydration typical of each of the seasons. These may defend against the lower humidity and cold temperatures experienced in winter or nurture the regenerative spurt characteristic of springtime.

Products such as Xilogel® which improves hydration, Bosexil™ with its soothing properties, Siliphos® good for anti-aging treatments and Centevita™ which aids skin firming are just some of the many selected active ingredients whose formulae offer a guarantee of efficacy and safety.
FOLLOW INDENA ON SOCIAL NETWORKS!

Indena communication went fully digital in 2012. The company is one of the first in the industry to set up its own series of new communication channels, including Twitter, YouTube, Flickr and LinkedIn.

The latest addition is our Twitter account @IndenaSpA where we tweet and retweet news and events, sharing our almost centennial knowledge and offering snippets of information on the properties of plants and extracts - real "gems" which can be accessed on #botanicalgems.

Aspects of company life are now posted on our YouTube Channel. A number of educational and documentary videos take viewers into our plantations, show where extracts are manufactured and allow them to visit us at trade fairs. Get to know the people who work in Indena by watching our videos and get a sense of the passion which lies behind our products!

Beautiful images of the plant world, which over the years have become a hallmark of the Indena communication style, can be seen on Flickr. From the masterful professional images taken by Mario De Biasi to superb snapshots of our plants, the Indena Flickr channel is an appealing tribute to the wonders of the natural world.

LinkedIn on the other hand provides a more institutional insight into Indena, with corporate newsfeeds and the latest business and product info.

INDENA SPREADING THE WORD

Throughout the year Indena has organized for customers and partners a whole series of meetings to consider topics of particular relevance in the world of natural derivatives. Some three hundred people interested in these issues attended the most recent events which were held in Mumbai, Taiwan, Seoul and Milan.

The presentations dealt with the most relevant aspects for the industry such as the quality and adulteration of botanical ingredients, the interface between nutrition, drugs and nutraceuticals along with the latest studies on our products, principally Enovita®, Mirtoselect® and Meriva®.

Indena is grateful for the valuable help and support received from G.C. Chemie Pharmie Ltd in India, New Chiens Biotech Co. Ltd in Taiwan and Samoh Farmachem Co. Ltd in Korea. Our sincere thanks go to all involved.

SETTALA FEATURED IN AWARD-WINNING VIDEO

The USA information distribution company VIRGO, focused on the most innovative and complex business-to-business markets, has won the “min’s Best of the Web Award” with a documentary about Indena. The video, “SupplySide R&D Insights Global Experience R&D Documentary Film”, was shot at the Indena Research Center in Settala, Italy, and features a rare, behind-the-scenes look at the whole production process, from the extensive plantations to the quality control and R&D labs, showing how everything is integrated throughout the supply chain. “min’s Best of the Web Award” is arguably the industry’s top honor in the digital space, recognizing outstanding websites and digital initiatives among consumer and B2B magazines.
FROM OUR NEW CHAIRMAN

I am delighted to take on the leadership of Indena, some ninety years after its creation. If the founders of that very first company in 1921 were here today, they would see a very different reality indeed: the market has changed to something more complex and in rapid evolution. Indena has been able to transform, evolve and become a global force in the different markets in which we operate; pharmaceuticals as ever remain the company’s core business, but we are also strong in the innovative nutritional and personal care fields. Over time, these sectors have specialized and Indena has indeed played a proactive role, both in research, in collaboration with the most prestigious institutions in the world, and with dynamism in our company systems, priding ourselves as ever on the quality of our products which we have made our hallmark.

This has come about thanks to all those people who over the years have occupied each and every position in the company; people who believed in the very values of quality, passion, rigor and innovation on which Indena was founded, making them their own.

And this is what I ask of us all now, whatever our role, that together we continue to believe in these values, and are spurred on to renew our commitment every day.

Biagio Della Beffa

SAFETY FIRST FOR INDENA

Indena’s French production site in Tours which processes about 5,000 tons of raw materials per year, has successfully passed the US FDA inspection assessing the GMP compliance of Dietary Ingredients. The inspection involved the entire organization and focused on manufacturing operations, HACCP, sanitation, cleaning, recall, complaint and training program and procedures. This is a further accolade for our French facility which has already undergone regular audits by ANSM (Agence nationale de sécurité du médicament et des produits de santé). Furthermore, the products manufactured by our Tours facility (including Leucoselect®, Ginkgoselect® and their Phytosome® forms, Enovita®, Virtiva®, Ginseng and Grape Red leaves extracts) have been granted with Halal and Kosher certification.

In addition to this, Indena self-affirmed GRAS (Generally Recognized as Safe) its non-caloric standardized olive extract Opextan®. This extends the portfolio of products suitable for the US food market which already includes the Green Tea, Linden flower and Hops extracts.
BREACKFAST WITH INDENA

Breakfast with Indena?
As of this year, our customers and partners can sip their tea, coffee or infusions from the first two mugs of our brand new set featuring images from our photo collection. This is a novel way for Indena to increase a sense of community in everyday life. Our famous plant photos, distinctive and recognizably Indena, can now be found in our kitchens - or on the desks of those who don’t have time for breakfast, as well as on our calendars, website, brochures and display stands.

Indena’s new mugs: Ginkgo biloba and Passiflora incarnata

INDENA EVENTS CALENDAR

CPhI Worldwide 2013
Frankfurt, Germany
22-24 October 2013
Messe Frankfurt
Stand 30B26 – Hall 3.0

SupplySide West
Las Vegas, USA
12-16 November 2013
Stand 24019

Food Ingredients
Frankfurt, Germany
19-21 November 2013
Messe Frankfurt
Stand 91D54 – Hall 9.1

Nutraformulate
Birmingham, UK
18-19 March 2014
NMM Exhibition Centre
Stand 112

Food Ingredients China
Shanghai, China
25-27 March 2014
Shanghai World Expo Exhibition and Convention Center
Stand 2C69

In-Cosmetics
Hamburg, Germany
1-3 April 2014
Hamburg Messe
Stand 1E50 – Hall 1

Vitafoods
Geneva, Switzerland
6-8 May 2014
Palexpo Geneva
Stand 17041 – Hall 1 & 2

FCE Pharma
San Paolo, Brazil
12-14 May 2014
Transamerica Expo Center
Stand C285

CPhI China
Shanghai, China
26-28 June 2014
SNIEC Pudong
Stand E1C18 – Hall E1

For the complete events list, visit indena.com