


 A photograph of a man and a woman walking hand-in-hand on a sandy beach. They are both dressed in white, short-sleeved shirts and trousers/skirts. The woman is wearing sunglasses and a white headscarf. The man is also wearing sunglasses. They are walking towards the camera, with the ocean waves crashing behind them. The sky is bright blue.
 

# Healthy innovations

BIOHIT IS DEVELOPING PRODUCTS TO COMBAT THE HARMFUL EFFECTS OF CARCINOGENIC ACETALDEHYDE

**Founded in Helsinki, Finland** in 1988 by Professor Osmo Suovaniemi (MD, PhD), a recognised pioneer in the innovation and development of a range of medical solutions, Biohit is a market leader in liquid handling applications, diagnostic solutions and cancer prevention products. In 1972 Professor Suovaniemi established LabSystems, followed by Eflab in 1978 both of which are successful companies operating in the medical field, while in 1976 he received an award from the Finnish Foundation of Inventors for the single- and multichannel Finnpiquette invention, to name just one of his accolades. Biohit has grown over the years to present a number of global industrial standards for the medical industry founded on the invention of Professor Suovaniemi's Finnpiquette and vertical measurement principle together with instrument applications such as Multiskan, the very first microplate reader, and later, for example, Fluroskan and Luminoreader for microplate based non-radioactive immunoassays. His innovations, such as multichannel Finnpipettes and vertical measurement principle, have revolutionised

microplate-based immunoassays worldwide and have been utilised extensively and successfully since the 1970s. These innovations have become global laboratory and industrial standards. They also resulted in the rapid and massive development of reliable and safe non-radioactive microplate based immunoassays, on which, for instance, Biohit's GastroPanel and GastroView and many other microplate immunoassays are based. Today the major part of analysers and analysing systems in research, industry and clinical laboratories are based on the vertical measurement principle. They are widely used in microplate based immunoassays for infectious diseases, cancers and numerous other diseases. They are also every day tools in basic research, high throughput screening (HTS), polymerase chain reaction (PCR) and biochip technologies as well as genome studies and drug development.

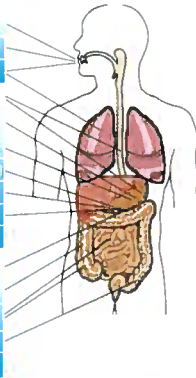
The company now has an increasing portfolio of products for diagnostic test systems, and liquid handling for use in research, healthcare and industrial laboratories as well as services for the maintenance





Biohit is a global high-tech biotech company driven by solid basic research and innovations. In its focused niche markets Biohit is the global market leader in electronic pipettes, and the world's leading Original-Equipment-Manufacturer (OEM) of liquid handling products

- XyliCyst
- BioFood
- BioFilter
- GastroView and GastroPanel
- Helicobacter pylori quick test
- Acetium
- Lactose intolerance quick test
- Celltac panel
- Cellular Fibronectin
- Telomere anti bodies (SLB)
- Monoclonal Antibodies
- Calprotectin
- IBO panel (Crohn's disease and ulcerative colitis)
- DalenView
- GASTROPANEL LABORATORIES



Gastrointestinal disorders are a growing medical, ethical and economic global problem and they are among the most common types of complaints made to primary care physicians worldwide, and are associated with a substantial healthcare and economic burden. Biohit's diagnostics and products will alleviate and solve these huge medical and economic problems

and calibration of such. Moreover, Biohit offers superior innovative products for the inactivating of carcinogenic acetaldehyde in the gastrointestinal tract. Constantly looking to retain its position as a pioneer in the market, this public in listed company dedicates its resources to a new product innovation that continuously sets it apart from its competitors, for example in January 2000, 20 new companies listed on the Helsinki stock exchange had 11 patents altogether, whereas Biohit alone had 16.

With its headquarters, R&D resources and main production unit in Helsinki, the company also has a production facility in China, as well as subsidiaries in the US, China, Japan, Russia, India, France, Germany and the UK. "We have two main lines of production divided into diagnostics and cancer prevention, and liquid handling that can be used in any kind of laboratory whether it be clinical, research-based or industrial. For the liquid handling sector we place great emphasis on safety and we are leading the way for our competitors in the safe handling of liquid, which is accompanied by our worldwide service system. We provide a number of big players in the market with electronic OEM-products to complete their diagnostic systems, giving them added value for their operations so they can function at an efficient and professional rate. One of our few main competitors is a German company that we have aided in its success and growth through developing some electronic and licensing some features for mechanical pipettes to help them use the latest technologies and fulfil safety requirements," Osmo Suovaniemi, managing director and founder of Biohit, notes.

One of the company's biggest areas of development is in cancer prevention, which involves products that help combat stomach acid deprivation and the effects of smoking. Acetaldehyde is Group 1 carcinogen to humans, which is found in alcoholic

beverages and tobacco smoke, for instance. Furthermore, it is produced locally in the oral cavity and anacidic stomach by microbes representing normal digestive tract flora from alcohol and sugars. Carcinogenic acetaldehyde is also formed in the stomach during the use of drugs that inhibit gastric acid secretion like proton pump inhibitor (PPI) drugs. To tackle this common problem, Biohit has developed a number of products that can inactivate acetaldehyde from the saliva of smokers, an acid-free stomach and from certain food products. These are known as XyliCyst tablets and chewing gum, Acetium capsules and BioFood respectively. It is essential to improve the early detection of the physiological and medical conditions associated with enhanced acetaldehyde production, as the worldwide number of people with oral, pharyngeal, oesophageal and gastric cancer is a significant figure of three million, with a survival rate of less than five per cent.

Osmo explains the benefits of these products: "XyliCyst and Acetium have been classified as medical devices by the authorities, which will considerably help their worldwide marketing but also recognise their superior qualities over conventional solutions. Acetium capsules are taken during meals to inactivate carcinogenic acetaldehyde in the acid-free stomach. XyliCyst inactivates carcinogenic acetaldehyde in saliva and moreover, may have additional advantages in decreasing cravings associated with tobacco smoking. There is a lot of evidence suggesting that acetaldehyde, by forming false neurotransmitters, may play an important role in tobacco and alcohol addiction. We are extremely satisfied with the performance and results of these products."

Great achievements have also been gained in the development of GastroPanel and GastroView examinations, which will be launched to the general market in the coming months. These examinations

Many OEM clients such as bioMérieux, 3M and Johnson & Johnson Group's three companies complement their diagnostic test systems with Biohit's innovative Liquid Handling solutions and technologies.

provide a non-invasive, patient-friendly, cost efficient and reliable method of diagnosing a healthy stomach without the need for invasive and expensive endoscopic procedures. These two forms of tests provide a reliable diagnosis of both *Helicobacter pylori* (*H. pylori*) infection and atrophic gastritis (the serious risk factor for gastric and esophageal cancer as well as vitamin B12 and calcium deficiency) that may result from the *H. pylori* infection or autoimmune disorder. Osmo comments: "These developments are a much cheaper option for patients and global health services alike - they remove the need for gastroscopies and biopsies, saving up to 40 - 70 per cent in unnecessary procedures."

He adds: "It has been possible to create the GastroPanel innovation as the result of my innovations, which, according to the National Technology Agency of Finland's 'Paving the Way for Evidence Based Medicine: Diagnostics 2000 has revolutionised laboratory routines worldwide in the 1970s and 1980s'.

Osmo concludes: "In regards to our diagnostics

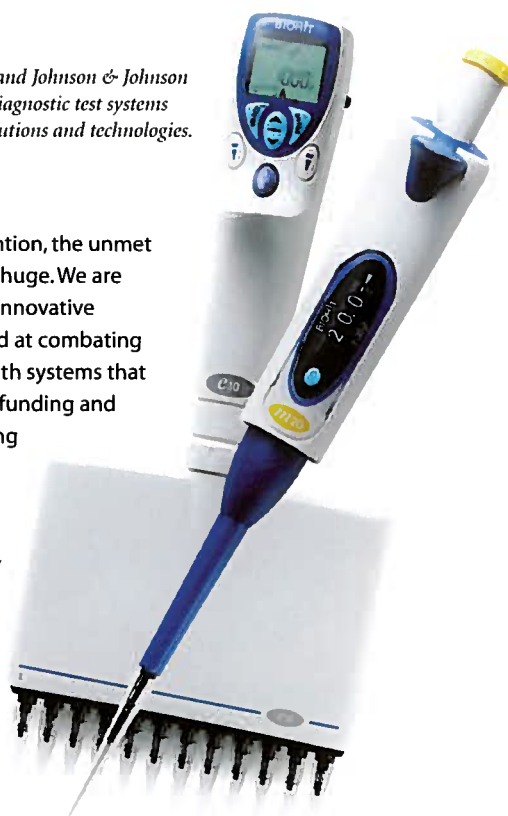
and products for cancer prevention, the unmet need and market potential are huge. We are continuously developing new innovative market-leading solutions aimed at combating the concerns of the global health systems that are struggling from the lack of funding and resources, as well as the evolving health problems we are seeing across the medical industry. Over the coming years, our success depends on how many resources we collect, the partnerships we form and the professional relationships we maintain." □

#### Biohit

[www.biohit.com](http://www.biohit.com)

Employees: 370

Products: Diagnostics, cancer prevention and liquid handling



**BIOHIT**  
Innovating for Health



## Biohit - Innovating for Health

For more than 20 years, our high-quality, ergonomic and safe liquid handling devices have provided unbeatable accuracy and precision time after time, and helped professional laboratories throughout the world achieve better results.

In the field of diagnostics, our groundbreaking products and technologies aid healthcare professionals provide safe, ethical and cost-efficient screening and diagnosis of gastrointestinal diseases.



Read more at [www.biohit.com](http://www.biohit.com)



The private company Pharmia, founded in 1993, is the leading Finnish contract manufacturer specialised in development and manufacture of food supplements and medical devices.

Our clients are pharmaceutical companies marketing food supplements and wholesalers of health foods all over the world.

#### Product forms:

- Tablets
- Coated tablets
- Chewable tablets
- Hard gelatin & cellulose capsules
- Liquids and extracts

#### Packaging forms:

- Blisters
- Jars
- Bottles
- Cartons

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