

A summary about Biohit's market driven and ethical activity and products

As the result of Biohit's market driven and ethical innovation- and patenting strategy and substantial community-responsible investments, the company has introduced a series of products based on several innovations of the company (<https://www.biohithealthcare.com/wp-content/uploads/2018/12/biohit-innovation-patenting-strategy1.pdf>).

Such innovations that meet the major global unmet need, increase patient safety and capable for primary prevention of diseases, include GastroPanel, ColonView-FIT and Acetium-series of products ([https://www.biohithealthcare.com/News/Reading material: State of the art GastroPanel and Acetium innovations for the unmet need](https://www.biohithealthcare.com/News/Reading%20material%3A%20State%20of%20the%20art%20GastroPanel%20and%20Acetium%20innovations%20for%20the%20unmet%20need)) (<https://www.biohithealthcare.com/Products>). The GastroPanel Laboratory delivered on the turnkey basis is capable of performing any type of microplate ELISA tests for multi-purpose diagnosis and research of, e.g., cancer and infectious diseases. The multichannel pipetting and the vertical light beam measurement for microplate readers and analyzing systems are inventions by the company founder that revolutionized laboratory routines worldwide since the 1970s. These inventions have been utilized in research and development of microplate diagnostics so extensively that they can justifiably be called global industrial standards.

GastroPanel is a blood test for the first-line diagnosis in patients with *Helicobacter pylori* infection, upper abdominal symptoms and reflux complaints, and in addition, a highly informative test (capable of inducing substantial savings in the life-time health care costs) for screening of gastric-and esophageal cancer risk (www.gastropanel.com).

-[https://www.biohithealthcare.com/News/ Reading material, e.g.,: GastroPanel innovation](https://www.biohithealthcare.com/News/Reading%20material%3A%20GastroPanel%20innovation)
-www.biohithealthcare.com/additional-information

According to the cost model designed by the Nordic Health Care Group (NHG), screening of the different risk factors of gastric-and esophageal cancer by GastroPanel test, would save the life-time health care costs of 10 age groups (e.g., 65-74-year-old) in Finland by over 800 million euro (<https://www.gastropanel.com/decision-makers/screening-model>)

GastroPanel- and ColonView-FIT- tests are recommended as the first-line diagnostic tests for the patients with *Helicobacter pylori* infection, dyspeptic symptoms and reflux complains, to increase patient safety and to achieve cost savings. GastroPanel might be a useful adjunct in coronavirus testing of elderly people, because, in most cases, asymptomatic atrophic gastritis (with all its potential sequels, such as gastric cancer and the deficiency of vitamin B12 and iron) might predispose these senior citizens also to coronavirus infection and/or to more severe forms of the disease (www.biohithealthcare.com/additional-information4 :25-30).

It is also recommended that the current best practice guidelines (dyspepsia and reflux disease) should be updated e.g. by replacing the traditional and problematic *Helicobacter pylori* tests (13C-urea test, UBT and stool antigen test, SAT) by GastroPanel-examination (10,11,23,24,26,37-41).
-[https://www.biohithealthcare.com/News/Reading material: Dear Colleague 2006 and GastroPanel innovation](https://www.biohithealthcare.com/News/Reading%20material%3A%20Dear%20Colleague%202006%20and%20GastroPanel%20innovation)

-<https://www.biohithealthcare.com/wp-content/uploads/2019/05/Table.-GastroPanel-vs.-UBT-ja-SAT.pdf>.

-[https://www.biohithealthcare.com/Investors/Stock Exchange Release: 2022-09-19T10:00:00Z](https://www.biohithealthcare.com/Investors/Stock%20Exchange%20Release%3A%202022-09-19T10:00:00Z)
– [Strong scientific Support for Biohit's GastroPanel in International Consensus Report](#) .

In its laboratory directory, the Finnish leading laboratory, HUSLAB announces the following indications for the "stomach biomarker examination" (GastroPanel): *"The tests are used in the diagnostic set-up of the patients with abdominal complaints, in diagnosis of Helicobacter pylori*

infection, and in early detection of atrophic gastritis” (www.biohithealthcare.com/additional-information4 :10, 37). Atrophic gastritis and long-term use of PPI medication lead to acid-free stomach, with potentially increased risk of gastric cancer. Emerging evidence suggests that it is advisable to reduce this risk by eliminating carcinogenic acetaldehyde borne in acid-free stomach using Acetium-capsules (:31-36) (www.acetium.com).

ColonView-FIT for the primary diagnosis of upper abdominal symptoms, of which up to 50% (particularly among elderly people) might be of intestinal origin, it is recommended to use the immunochemical ColonView-FIT-test for detection of fecal occult blood (www.colonview.com). This principle of immunochemical detection of human hemoglobin invented by the company founder in the early 1980’s, has subsequently spread into global use (www.biohithealthcare.com/additional-information). The highly sensitive ColonView-FIT measures both hemoglobin and hemoglobin-haptoglobin complex, is designed for the primary diagnosis, but is also highly suitable for colorectal cancer screening, detecting cancer precursor lesions (adenomas and polyps), thus facilitating the timely referral of the patients for colonoscopy and other appropriate examinations and treatment.

-[https://www.biohithealthcare.com/Investors/Stock Exchange Release: 2019-01-18T07:30:00Z](https://www.biohithealthcare.com/Investors/Stock%20Exchange%20Release%202019-01-18T07:30:00Z)

– [Biohit new-generation fecal immunochemical test \(ColonView-FIT\) is superior to traditional guaiac test in colorectal cancer screening](https://www.biohithealthcare.com/Investors/Stock%20Exchange%20Release%202022-08-09T10:00:00Z)

-[https://www.biohithealthcare.com/Investors/Stock Exchange Release: 2022-08-09T10:00:00Z](https://www.biohithealthcare.com/Investors/Stock%20Exchange%20Release%202022-08-09T10:00:00Z)

– [Dyspeptic symptoms need early attention- domestic innovations GastroPanel, ColonView-FIT and Acetium will help.](https://www.biohithealthcare.com/Investors/Stock%20Exchange%20Release%202022-08-09T10:00:00Z)

The latest Maastricht/Florence Consensus Report on management of *Helicobacter pylori* infections stated that screening modalities for gastric cancer prevention should be offered in combination with colorectal cancer screening. According to the consensus report, the best way to do this is to use serologic biopsy with determination of serum pepsinogen I and II (sPG-I and sPG-II), including the calculation of the sPG-I/II ratio, in combination with the analysis of anti-*H. pylori* antibodies (S-gastrin 17 complements degree of atrophy severity). GastroPanel biomarkers and ColonView-FIT are the perfect match for this statement and recommendation.

Acetium capsules bind in acid-free stomach, resulting from atrophic gastritis or long-term use of PPI-medication, carcinogenic acetaldehyde, which is an important risk factor of gastric cancer. This invention has been granted a patent in 45 countries. By eliminating carcinogenic acetaldehyde, Acetium capsules might reduce the risk of gastric cancer, associated with acid-free stomach (www.acetium.com).

-[https://www.biohithealthcare.com/News/Reading material: State of the art GastroPanel and Acetium innovations for the unmet need](https://www.biohithealthcare.com/News/Reading%20material%20State%20of%20the%20art%20GastroPanel%20and%20Acetium%20innovations%20for%20the%20unmet%20need)

- <https://www.biohithealthcare.com/wp-content/uploads/2021/10/Improvement-of-symptoms-in-patients-affected-by-chronic-atrophic-gastritis.pdf>

-<https://www.biohithealthcare.com/wp-content/uploads/2021/09/Biohit-primary-prevention.pdf>

Prevention of Gastric Cancer: GastroPanel for Detection of Acid-Free Stomach and Its Protection by Acetium capsule

- Acetium capsule is designed for minimizing the exposure to carcinogenic acetaldehyde in the stomach)
- You might benefit from using Acetium capsules, if
 - you have an acid-free stomach due to atrophic gastritis
 - you are a regular user of PPI-medication
 - you have untreated *Helicobacter pylori* infection
 - you have “Asian flush” syndrome (ALDH2 Deficiency)
 - you are a regular cigarette smoker

- you have undergone stomach resection surgery
- It is also recommended to use Acetium capsule whenever you intake alcohol
- Acetium capsules may also be effective in prevention of headache attacks in certain types of migraine:

-www.biohithealthcare.com/Investors/Stock Exchange Releases: 2019-08-09T12:30:00Z – [Two clinical trials with Acetium® capsule for prevention of migraine-type headache have been concluded.](#)

-www.biohithealthcare.com/migraine-acetium : Comparison of galcanezumab (Emgality, Lilly) and Acetium capsules in prevention of migraine headache episodes. Unpublished observations. 2020; pp. 1-5.

Acetium lozenge helps quit smoking and possibly alleviate alcohol abuse and promote oral health by binding cigarette smoke-and alcohol-derived carcinogenic acetaldehyde in the saliva. Acetium lozenge has been granted a patent, *“Sucking tablet for use in reducing tobacco and/or alcohol dependence”* in 64 countries.

-www.acetium.com

-<https://www.biohithealthcare.com> /Investors/Stock Exchange Releases: 2017-08-02T06:30:00Z – [The results of Biohit’s second smoking intervention trial have been published](#)

Acetium lozenge (Quit Smoking – Nicotine Free), which has the potential to revolutionize smoking cessation market. This tablet, which essentially works by eliminating acetaldehyde from saliva, has numerous clinically proven benefits: As compared to NRT (nicotine related therapy), Acetium lozenge favorably competes in the following clinical and compliance aspects:

- 1) No side effects
- 2) No nicotine dependence and nicotine side effects
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2917405/>)
- 3) No upper limit for daily use (one lozenge for each smoked cigarette)
- 4) In RCT (randomized controlled trial)s, efficacy of Acetium in smoking cessation among subjects completing the intervention with PP (Per Protocol) equivalent to NRT
- 5) Tolerability superior to NRT
- 6) Study compliance extremely high (due to lack of side effects)
- 7) Favorable effect achieved within 3-4 months (among the responders)
- 8) Total costs of a quit attempt significantly lower (Acetium NOT continued after smoking quit)
- 9) A bonus effect of improving oral hygiene by its xylitol component (a very important property among smokers)
- 10) Offers a nicotine-free alternative to quit smoking without transferring the nicotine addiction from cigarette to an NRT device
- 11) EP 2 197 436 B1, *“Sucking tablet for use in reducing tobacco and/or alcohol dependence”*
- 12) Other bonus effects and harm reduction: Acetium binds carcinogenic acetaldehyde in saliva and may prevent cancers – as well as it may also reduce alcohol dependence.

The data from Global Cancer Observatory shows that number of lung cancer deaths are nearly expected to double over the course of next twenty years. What better way is there without nicotine to stop smoking than the Acetium lozenge? WHO reported recently, that every year tobacco causes the deaths of over 8 M people and uses 600 M trees, approximately 5% deforestation worldwide.
