

JUVIAGEL[®]

VAGINAL MOISTURIZING GEL

Zinc-Containing Vaginal Hydrogel

Science-Based Non-Hormonal Vaginal
Health Support

Who we are



Fempharma

European research-driven women's health company founded in 2016.

We develop proprietary, science-based healthcare products in gynecology and urology, combining translational research with clinically relevant innovation.

Core strengths

- Women's health focus
- Proprietary formulations
- Scientific and clinical backing
- ISO 13485 quality management and GMP manufacturing environment
- Scientific collaborations with academic and clinical partners

Mission

Improving Women's Health Through Science



Unmet Needs in Vaginal Health

GSM

- Affects ~50% of postmenopausal women and is also common in postpartum, after gynecological surgery, during or after chemotherapy
- Dryness, irritation, discomfort, pain during intercourse

Vulvovaginal Candidiasis (VVC)

- ~75% of women experience VVC during their lifetime
- Recurrent infections remain a major clinical challenge



The Solution: JUVIAGEL®



Zinc-containing non-hormonal vaginal hydrogel

Designed to support:

- Vaginal hydration
- Vaginal comfort
- Physiological vaginal environment

Key features:

- Hormone-free
- Local application
- Hydrogel technology
- Patent-protected formulation



Unmet need and market - GSM

Vaginal Dryness & GSM

- Common during menopause and postpartum
- Associated with reduced estrogen levels
- Symptoms include dryness, irritation, discomfort and painful sexual intercourse

Clinical Relevance

- Vaginal dryness prevalence ranges from 13% to 31%, although rates are significantly higher for postmenopausal women (50%), as well as in women treated for breast cancer (63%).
- The vaginal moisturizers market is expected to grow and reach USD 3 billion by 2028.

Scientific Rationale

Research suggests zinc supports¹:

- extracellular matrix homeostasis
- collagen production
- vaginal tissue quality

Selected publication:

1. Peter Takacs, Bence Kozma, Balazs Erdodi, Attila Jakab, Kindra Larson, Robert Poka, Zinc-containing Vaginal Moisturizer Gel Improves Postmenopausal Vulvovaginal Symptoms: A Pilot Study; Journal of Menopausal Medicine. 2019 Apr;25(1):63-68. 4.



Unmet need and market - VVC

Vulvovaginal Candidiasis (VVC)

- ~75% of women affected during lifetime
- Recurrent infections remain a major challenge
- Symptoms include dryness, irritation and discomfort

Translational Scientific Findings¹

Published research in Science Translational Medicine demonstrated:

- zinc availability influences inflammatory fungal signaling
- zinc-based local approaches reduced recurrence signals in women with RVVC

Selected publication:

1. E. Roselletti, E. Pericolini, A. Nore, P. Takacs, B. Kozma, A. Sala, F. De Seta, M. Comar, J. Usher, G. D. Brown, D. Wilson: Zinc prevents vaginal candidiasis by inhibiting expression of an inflammatory fungal protein
Science Translational Medicine, 6 Dec 2023
Vol 15, Issue 725



Cell and Animal Studies

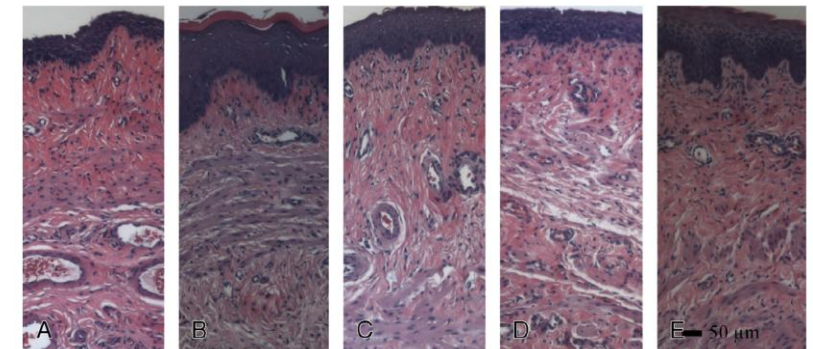
Preclinical Research Findings

Studies demonstrated that zinc:

- increased collagen and tropoelastin production¹
- altered vaginal tissue composition in OVX rat models³
- supported extracellular matrix structure⁵

Selected publications:

1. P. Takacs et al. Effects of PPAR-delta agonist and zinc on vaginal smooth muscle cells collagen and tropoelastin production. *Int Urogynecol J* (2012) 23:1775–1779.
2. Taneja S. K., Kaur R.: Pathology of ovary, uterus, vagina and gonadotrophs of female mice fed on Zn-deficient diet; *Indian Journal of Experimental Biology*, Vol. 28., Nov 1990, pp 1058-1065
3. P. Takacs et al. The Effects of PPARC Agonist and Zinc on Ovariectomized Rats' Vagina. *Female Pelvic Med Reconstr Surg* 2013;19: 126-131.
4. M.A. Kelkar, S.K. Khar and M. Mandakhote: Studies on antepartum prolapse of the vagina in buffalo- plasma trace element concentration; *Arch. exper. Vet. med.*, Leipzig 43 (1989), 315-318
5. P. Takacs et al. The Effects of PPARC Agonist and Zinc on Ovariectomized Rats' Vagina. *Female Pelvic Med Reconstr Surg* 2013;19: 126-131.



Human Studies - 1

Scientific Background for Vaginal Zinc Supplementation

Key Findings:

- Vaginal tissue zinc levels decline during menopause¹
- In human vaginal smooth muscle cell cultures, zinc increased collagen and tropoelastin production²
- Zinc supplementation demonstrated supportive effects on extracellular matrix composition and vaginal tissue physiology²
- Clinical studies with zinc-containing vaginal hydrogel showed improvement in postmenopausal vulvovaginal symptoms³

Selected publications:

1. P. Takacs et al. Effects of PPAR-delta agonist and zinc on vaginal smooth muscle cells collagen and tropoelastin production. *Int Urogynecol J* (2012) 23:1775–1779.
2. Taneja S. K., Kaur R.: Pathology of ovary, uterus, vagina and gonadotrophs of female mice fed on Zn-deficient diet; *Indian Journal of Experimental Biology*, Vol. 28., Nov 1990, pp 1058-1065
3. P. Takacs et al. The Effects of PPARC Agonist and Zinc on Ovariectomized Rats' Vagina. *Female Pelvic Med Reconstr Surg* 2013;19: 126-131.



Human Studies - 2

Zinc and Vaginal Inflammation Research

Translational Findings in Vulvovaginal Candidiasis (VVC):

- Candida albicans is associated with approximately half a billion infections annually
- Research published in Science Translational Medicine identified the fungal zinc-binding protein PRA1 as a mediator of vaginal inflammatory signaling⁴
- Zinc reduced PRA1-associated inflammatory responses and vaginal immunopathology in preclinical models⁴
- Women with recurrent vulvovaginal candidiasis receiving zinc-containing vaginal gel showed reduced recurrence signals in pilot observations⁴

Selected publications:

4. M.A. Kelkar, S.K. Khar and M. Mandakhot: Studies on antepartum prolapse of the vagina in buffalo- plasma trace element concentration; Arch. exper. Vet. med., Leipzig 43 (1989), 315-318

5. P. Takacs et al. The Effects of PPARC Agonist and Zinc on Ovariectomized Rats' Vagina. Female Pelvic Med Reconstr Surg 2013;19: 126-131.



Local Delivery & Biocompatibility

JUVIAGEL® was not toxic. The release of zinc is rapid from the vaginal gel. Zinc permeated rapidly through the vaginal epithelial cell layers.¹

Findings support the gel's role as an effective, nonhormonal, drug-free, and local adjunct treatment for a variety of vulvovaginal symptoms.²

Daily oral supplementation with 30 mg of zinc had no significant impact on CVL zinc level despite a significant rise in serum zinc level.³

Found a significant association between vaginal atrophy (vaginal maturation value < 50) and cervicovaginal lavage zinc levels. Zinc levels of cervicovaginal lavage could be used as a new marker of vaginal atrophy.⁴

Selected publications:

1. Ferenc Fenyvesi, Judit Varadi, Palma Feher, Ildiko Bacskay, Miklos Vecsernyes, Attila Sipos and Peter Takacs. Biocompatibility and zinc release testing of a zinc-containing vaginal gel. Menopause: The Journal of The North American Menopause Society Vol. 27, No. 2, pp. 143-149

2. Dávid Rátonyi, Barbara Kozma, Attila G. Sipos, Zoárd Tibor Krasznai, Bence Kozma and Peter Takacs. Improving Vaginal Health with a Zinc-Containing Vaginal Hydrogel. Gels 2025, 11(3), 214.

3. Peter Takacs, Peter Damjanovich, Attila Gergely Sipos, Bence Kozma. The effect of oral zinc supplementation on cervicovaginal lavage fluid zinc level. European Journal of Obstetrics & Gynecology and Reproductive Biology, Volume 248, p106-109, May 2020.

4. Peter Damjanovich, Attila Gergely Sipos, Kindra Larson, Tina D. Cunningham, Peter Takacs, and Bence Kozma. Cervicovaginal lavage fluid zinc level as a marker of vaginal atrophy. Menopause: The Journal of The North American Menopause Society Vol. 27, No. 7, pp. 776-779



Solution

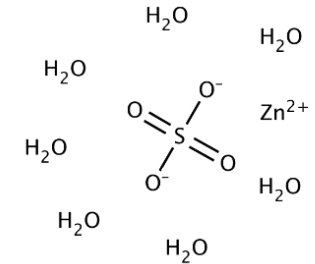
JUVIAGEL® is a zinc-containing, effective vaginal moisturizing hydro-gel that takes a new approach to treat vaginal dryness. It is recommended to all women for the treatment of vaginal dryness caused by menopause, pregnancy, infection or other medical conditions. Its unique ingredients have been selected to moisturize the skin and mucous membranes of intimate areas that have special needs.

Benefits:

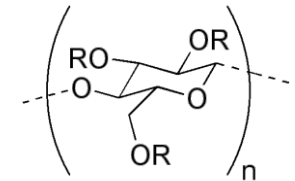
- Only vaginal gel with Zinc
- Hormone free
- It does not leak from the vagina, leaving no mark on the lingerie
- Provides hydration for up to a week
- Can be used as a lubricant during sexual intercourse
- Clear, odorless and homogeneous gel with a pleasant silky touch
- Naturally helps to clean the vagina
- Restores the natural bacterial flora and pH value of the vagina
- Has the same osmolality as natural vaginal fluid
- Complies with WHO regulations
- Glycerin, fragrance and paraben free
- Unique composition protected by international patent

Ingredients

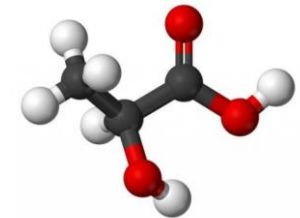
Zinc sulphate heptahydrate has a moisturizing and remodeling effect. It has a direct effect on collagen and elastin composition of the vaginal wall, thus helping to renew the connective tissue elements of the vagina.



Hydroxyethyl cellulose is a universal placebo vaginal gel which is non-toxic, bioadhesive, stable even after long storage and can bind to water molecules for a long-lasting hydration effect.



Lactic acid facilitates the required acidic pH value and supports the natural bacterial flora in the vagina.



Sodium chloride provides isotonicity. The osmolality of NaCl in the gel and natural vaginal fluids are the same. It also protects the mucous membrane from drying.



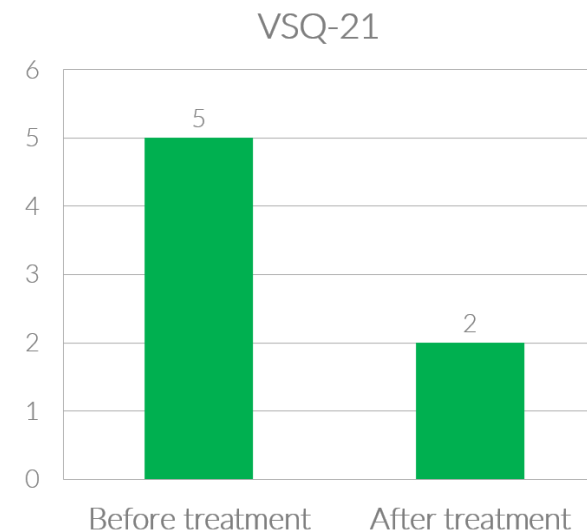
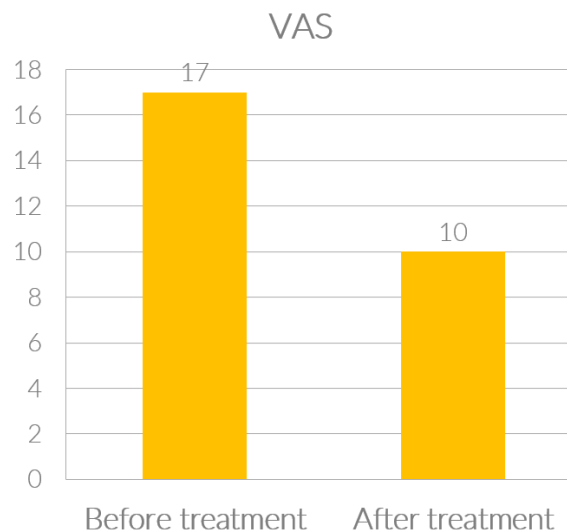
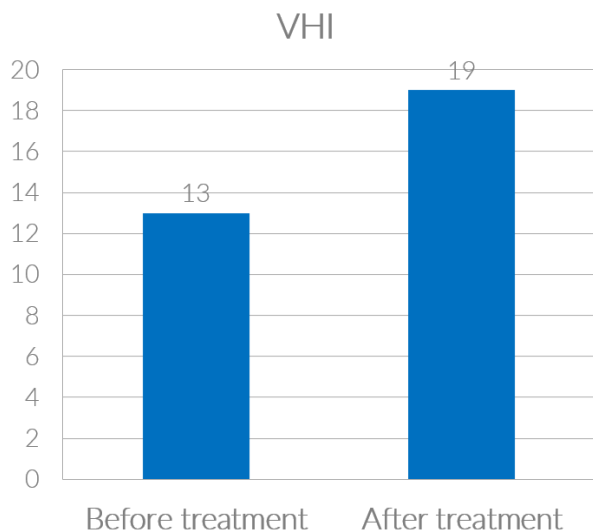
Efficacy of JUVIAGEL® - GSM

In order to examine the therapeutic effects of JUVIAGEL®, an eight-month long clinical study was conducted in 2018 at the Department of Obstetrics and Gynecology at the University of Debrecen in Hungary. ¹

The largest incremental VHI component change occurred in vaginal moisture.

In sixty percent of the women, the vaginal pH remained normalized (pH < 4.6) even 2 weeks after cessation of treatment.

82% of participants felt more self-confident after using the gel and reported a significant improvement in the quality of the sexual relationship.



Selected publication:

1. Peter Takacs, Bence Kozma, Balazs Erdodi, Attila Jakab, Kindra Larson, Robert Poka, Zinc-containing Vaginal Moisturizer Gel Improves Postmenopausal Vulvovaginal Symptoms: A Pilot Study; Journal of Menopausal Medicine. 2019 Apr;25(1):63-68. 4.

Efficacy of JUVIAGEL® – VVC

A retrospective cohort study was performed with the enrolment of 10 women with a history of recurrent vaginal infections at the outpatient clinic of the Department of Obstetrics and Gynecology, University of Debrecen, Hungary.

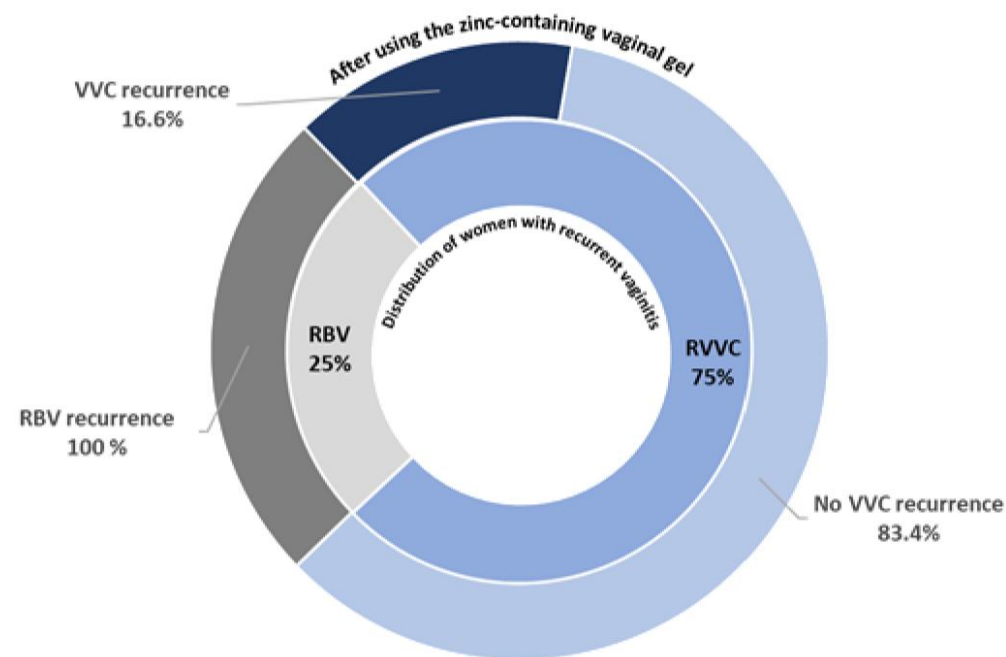
Recurrent vaginal infection included recurrent bacterial vaginosis (RBV) and recurrent vulvovaginal candidiasis (RVVC). Enrolment criteria included the presence of RBV or RVVC and recurrent vaginal infection was defined as three or more vaginal infections in the last 12 months (ACOG Practice Bulletin).

Women were asked to use JUVIAGEL® as prophylactic treatment for two consecutive weeks and, after that, twice per week. They were asked to return to the clinic if any symptoms of vaginal infection were present for evaluation. Patients underwent a detailed gynecological exam at enrolment and the follow-up visit.

After being treated with a prophylactic treatment with a commercially available zinc-containing vaginal gel JUVIAGEL®, results showed 62% reduction in infection.¹

Selected publication:

1. Kozma B, Sipos AG, Pázkoczy K, Takács P. Zinc-containing vaginal gel for the prevention of recurrent vaginal infections: a pilot trial. Poster presentation at the 2022 American Urogynecologic Society and International Urogynecological Association's 47th Annual Meeting. June 14-18, 2022. Austin, Texas.



Efficacy of JUVIAGEL® - Vulvovaginal Symptoms

Vulvovaginal symptoms affect up to 39% of women. These symptoms have a significant impact on quality of life and are often linked to imbalances in the vaginal microbiota.

Our study evaluates the therapeutic efficacy of a zinc-containing JUVIAGEL® in 37 women with different vulvovaginal symptoms (itching, burning, irritation, pain, dryness, discharge, and odor). Over 12 weeks, participants applied the gel intravaginally with both assessments conducted at baseline and follow-ups.

Results revealed substantial improvements in symptoms, including reductions in vaginal discharge, itching, and burning, as measured by the Vulvovaginal Symptom Questionnaire (VSQ-21). Vaginal Health Index (VHI) scores improved significantly. Vaginal pH levels decreased significantly.

A correlation analysis showed an inverse relationship between baseline CVL zinc levels and VSQ-21 scores.

Findings support JUVIAGEL®'s role as an effective, nonhormonal, drug-free, and local adjunct treatment for a variety of vulvovaginal symptoms.¹

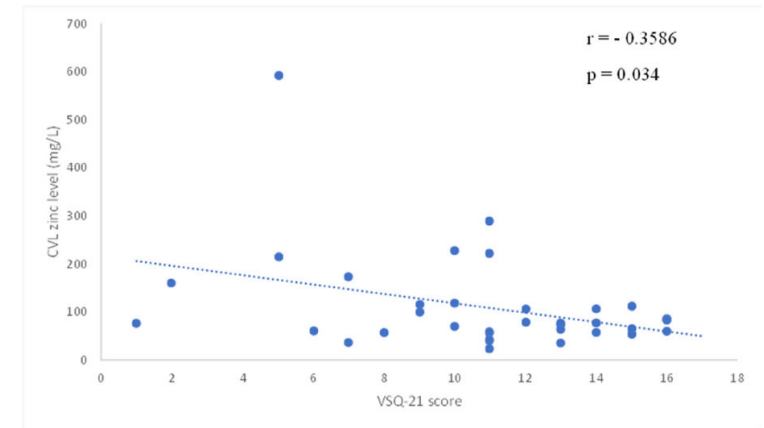


Figure 1. Correlation of CVL zinc levels and VSQ21 scores at enrollment. Data demonstrate a significant inverse correlation between baseline CVL zinc levels and VSQ-21 scores, meaning that higher zinc levels were associated with fewer vulvovaginal symptoms.

Selected publication:

1. Dávid Rátonyi, Barbara Kozma, Attila G. Sipos, Zoárd Tibor Krasznai, Bence Kozma and Peter Takacs. Improving Vaginal Health with a Zinc-Containing Vaginal Hydrogel. *Gels* 2025, 11(3), 214.

Safety of JUVIAGEL®

Sold over 50K boxes since 2017 with no complaints. There are no side effects reported at recommended doses. No serious adverse events have been reported with usage.

JUVIAGEL is manufactured in a GMP complying factory and the whole product lifecycle is managed under ISO 13485.



ISO 13485:2016

Intellectual Property Protection



The scientific foundation for product development for GSM has been granted under the US Patent entitled “VAGINAL TISSUE REJUVENATION COMPOSITIONS AND METHODS (US Patent No: 9,375,450, 6-28-2016 and EU Patent No: EP 2734159).

A patent application was filed for VVC treatment under the US patent entitled “PHARMACEUTICAL COMPOSITION AND METHOD FOR TREATING OR PREVENTING CANDIDIASIS” (Application number: 63456387)

“JUVIAGEL” trademarked by EUIPO.

Availability

JUVIAGEL is on the Hungarian market since 2017. It's on the shelves of Drogerie Markt (DM) and Rossmann as well as can be purchased in pharmacies.

Sold over 50.000 boxes.

Due to the new medical device regulations in the EU, JUVIAGEL is under reclassification to MDR Class IIb. Dossier for registration is available.

Product



JUVIAGEL® has been developed for women suffering from vaginal dryness. It nourishes and moisturizes the mucous membrane of the sensitive, dry vagina.

44 ml e gel content

Package Contents:

- 44 ml gel in aluminum tube
- Vaginal applicator packed in foil
- Instruction manual / User's Guide

The gel exerts its effect in the vagina. It is recommended to use daily before bedtime in the first two weeks. Frequency of use is later determined by individual comfort (usually 1-3 times a week). The attached vaginal applicator can be drained to the end of the tube to draw the desired amount of gel (approximately 2 ml). The gel can be applied to the vagina using the applicator.

The gel can act as a lubricant during sexual activity.

Pipeline development

Based on scientific findings the combination of Zinc and Estrogen (E3 Estriol) can have a synergic effect.

We have created the gel prototype and conducted the pre-clinical research.

Biocompatibility was assessed on human skin keratinocyte (HaCaT) cells, which showed increased cell viability and no obvious cytotoxicity. The results indicated that efficient E3 release and satisfactory epithelial permeability with HPBCD provide the bioavailability of E3. These results suggest the potential of the gel as a biocompatible and effective alternative for the treatment of GSM.¹

Selected publication:

1 Peter Takacs, Barbara Kozma, Dávid Rátónyi, Bence Kozma, Kiss-Szikszai Attila, Ferenc Fenyvesi and Attila G. Sipos.
Development and Bioavailability
Assessment of an Estriol-Containing
Vaginal Hydrogel. Gels 2024, 10, 823.

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CPHI, October 6-8, 2026 – Milan, Italy

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