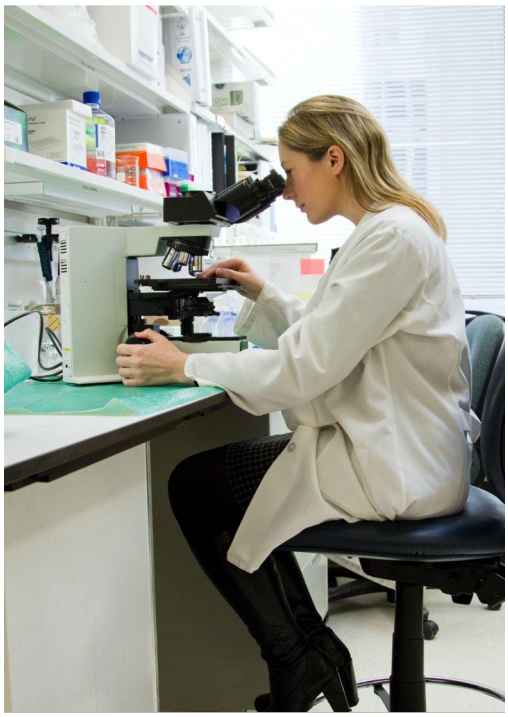

Follicum
A new portfolio company in the
Coegin Pharma Group
COEGIN
PHARMA
Mission to demonstrate high value of FOL005 - a novel
and proprietary drug candidate for effective treatment of andro-genetic alopecia
www.coeginpharma.com

Introduction

As part of Coegin Pharma AB's hub & spoke "portfolio" business model, with clear benefits to investors, Coegin Pharma AB has established the Swedish portfolio company Follicum AB to further develop a highly promising novel and proprietary dermatological drug candidate FOL005. Follicum AB will primarily be managed and financed separately from Coegin Pharma AB.



The goal of the hub & spoke business model is to focus on identifying new ground-breaking projects with clear potential for value addition with the following phases: Identification ⇒ Financing ⇒ Value building ⇒ Exit.

Coegin Pharma AB's hub & spoke model reduces corporate costs, creates the right focus and enable effective exit. The company is driven by a seasoned management team with key competencies in dermatology, oncology and inflammation and is governed by a professional board of directors.

The portfolio of companies in the Coegin Pharma Group includes besides Follicum also Avexxin Oncology and the upcoming company dedicated to actinic keratosis and skin cancer.

An attractive market

The global dermatology market size was USD 19.974 Billion in 2020 and is forecasted to reach USD 59.309 Billion in 2030 with a CAGR of 11.5% from 2021-2030. The future key drivers are believed to be psoriasis, dermatitis, acne, rosacea, **alopecia** and skin cancer.

Alopecia, also known as hair loss or baldness, is a chronic dermatological disorder characterized by the partial or total loss of hair on the scalp. As it has a hormone and genetic element of the disease it is referred to as andro-genetic alopecia (AGA) and accounts for >95% of hair loss in men with 50–60 million men and 30–35 million women affected in the US alone. The incidence of AGA varies with ethnicity, but in general up to 70% of men and 40% of women experience some degree of AGA in their lifetime. Men usually suffer from hairline recession, while women typically develop a diffuse thinning over the top of the scalp (Fig. 1.A).

Figure 1.A, Incidence and characteristics of AGA

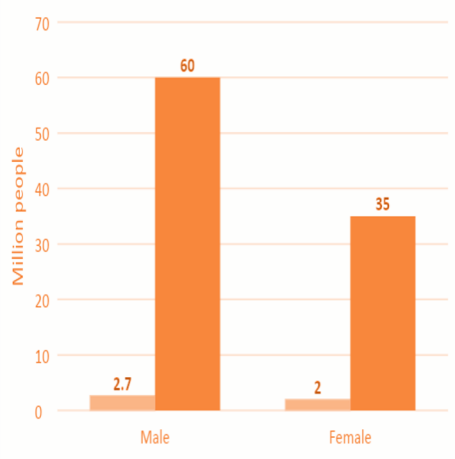


Figure 1.B, dark orange, prevalence of patients, light orange patients treated

AGA is poorly understood but it is believed to be induced via activation of hormones or due to decreased vascularization of the hair follicles. More than 90% of patients are not being treated Figure 1.B

Reference: Allied Market Research, Dermatologicals market, Jan 2022, page 262

Existing treatments

Currently, there are only two drug classes on the market to treat alopecia. However, these drugs have limited efficacy and response rate. In addition, they are associated with important side effects such as sexual function disorders or growth of hair in untargeted body parts. Therefore, there is a clear need for novel products to help people worldwide who suffer from alopecia to recover their hair and increase their quality of life. There are two EMA/FDA- approved drugs for the treatment of AGA, minoxidil and finasteride.

Minoxidil was initially developed by Upjohn Company (later part of Pfizer) in 1950 for the treatment of ulcers. After discovering its effect on hair growth, it was approved by the FDA in 1988 for the treatment of AGA. The exact mode-of-action (MoA) of minoxidil remains unknown, but it is reported to increase vascularization of the hair follicles. Minoxidil's efficacy in the overall population remains relatively low, with approximately 30-40% of responders after one year. Common side effects of minoxidil include burning or irritation of the eye, itching, redness or irritation at the treated area, and unwanted hair growth elsewhere on the body.

Finasteride was developed by Merck & Co., patented in 1984, and approved by the FDA in 1997 for treatment of AGA. Finasteride is available only for men and it works by inhibiting the conversion of testosterone into DHT, the hormone that induces AGA. Regarding its efficacy, 50% of recipients experience improvements in hair growth at 1 year. Despite finasteride has a higher efficacy than minoxidil, it also has stronger side effects including sexual function disorders such as decreased libido and erectile dysfunction.

The response rate to treatment after one year is with minoxidil ~ 30-40% and finasteride 50%

Apart from minoxidil and finasteride, several drugs are prescribed off- label for the treatment of AGA. Among these we can find Dutasteride, which has a similar mode of action as finasteride. Other drugs under development might enter the alopecia market in the following years, including reformulation products of minoxidil or finasteride alone or in combination.

However, despite its huge potential, the alopecia market is characterized by slow developments due to the lack of funds obtained for research in the area, as alopecia is often seen as a cosmetic problem rather than a disease. Four products are in Phase II/III clinical trials at this moment, including FOL005 by Follicum AB, Breezula by Cosmo Pharmaceuticals and KX-826 by Kintor Pharmaceutical.

Several non-pharmacological therapies exist such as hair transplantation, scalp reduction, stem cell transplantations and low-level laser therapy. Hair transplantation includes transplanting DHT-resistant follicles from other parts of the head to bald areas, while scalp reduction is an outdated procedure which entails stretching the hairy parts of the scalp to cover the parts that have no hair. In low-level laser therapy light photons are irradiated to the scalp and absorbed by cells to encourage hair growth. The main disadvantage of hair transplantations and scalp reduction is that these are temporal solutions which do not stimulate growth. Laser therapy is a time- consuming procedure that requires many sessions while the long-term safety and effectiveness is unclear.

Market size and Market for exits/out licensing

Market size

The global market size is estimated in 2024 to be 3.2 bUSD for finasteride and 1.9 bUSD for minoxidil. There is a high unmet medical need with a large potential to expand the existing market as e.g. in the US alone only 4.5% men and 5.7% women are treated for AGA (Figure 1.B).

The global market size is estimated to be 5.1 bUSD

In conclusion, the current alopecia treatment market is characterized by few available medical products with moderate effect and safety concerns which leaves a high need for novel treatments with improved efficacy and safety profile.

Market for exits/out licensing

We aim to fully out-license FOL005 to one or several commercial partners before the next clinical Phase IIb clinical trial which will be designed to demonstrate the potential of the new treatment and significantly increase the commercial value of the asset. This is a well-established commercial strategy for small and agile companies in the pharmaceutical space and will generate income from upfront and milestone payments and from royalties from product sales. A list of benchmark deals is available in Table 1 which highlights the deal between Allegan and Exicure for the development of novel treatments for hair loss disorders, which took place in 2019 and accounted for a deal worth up to €660M. Obviously, deals for Phase 3 projects represent higher value than deals for Phase I/II projects which is why we continue to invest in FOL005 while actively seeking the right partner(s).

Company/Partner	Year	Technology and stage	Indication	Terms
ACTELION / KYTHERA biopharmaceuticals	2015	PDG2 blocker, Phase II	Alopecia	$27M (upfront $1.5M + milestones + royalties)
RepliCel / SHISEIDO	2013	Cell therapy, Phase II – Asian rights	Alopecia	$33M (upfront $4M + milestones + royalties)
rigel / aclaris THERAPEUTICS	2015	JAK blocker, Phase I	Alopecia Areata	$98M (upfront $8M + milestones + royalties)
exicure / Allergan	2019	Spherical nucleic acid (SNA) technology - 2 programs	Alopecia	$750M (upfront $25M + milestones + royalties)

Table 1, benchmark deals, Global Data.

Pipeline

FOL005 is among the very few assets in late stage development for hair loss and truly represents a novel mode of action. Ignoring the companies developing reformulations of existing marketed products, the late stage pipeline is dominated by companies developing topical androgen receptor antagonists. Kintor Pharmaceutical has advanced furthest and is in phase III with KX-826 in China for the treatment of male hair loss. Breezula from Cosmo Pharma has not progressed since reporting phase IIb data in 2019. (Folliclethought.com, GlobalData)

The background of Follicum AB and the drug candidate

In 2004 the founders of Follicum among others prof. Anna Hultgardh Nilsson[1] discovered, in connection with research on arteriosclerosis, that a modified protein increased hair growth in mice. The modified protein FOL005 was derived from the human glycoprotein osteopontin (OPN). OPN is an extracellular matrix glycoprotein with diverse immunomodulatory functions that has been associated with inflammation and fibrosis, but some publications also report OPN to be present in hair follicles in a hair cycle dependent manner. FOL005 has currently proof-of-concept in Phase IIa clinical study and a Phase IIb clinical study is planned.

Reference: [1] Patent US10137169B2

Androgenetic Alopecia a slowly developing disease

In men androgenetic alopecia is a genetically predetermined disorder due to an excessive response to androgens. However, the commonality between men and women is likely due to the muscle supporting the hair follicle (the arrector pili muscle), where a loss of attachment between the muscle and hair follicle bulge is associated with irreversible or partially reversible hair loss. A key driver for this is likely diminished blood flow to the muscle. Androgenetic alopecia develops slowly over time and it is caused by the hair follicle becoming smaller and, in the end, it is ultimately inactive and is not able to grow new hair, a process called miniaturization. Each hair originates in a hair follicle, and a cyclic process known as the hair growth cycle, that consists of four phases:

(1) the growth (**anagen**) phase, (2 to 7 years),
(2) the transition (**catagen**) phase, (2 weeks),
(3) the resting (**telogen**) phase where old hair is removed, (12 weeks), and
(4) the release (**exogen**) phase, which is the release phase of the telogen hair.

Miniaturization occurs at some point between the late catagen or early anagen phase, affecting the dermis (dermal papilla) and the tissue surrounding the hair follicle (dermal sheath), resulting in a smaller follicle and a reduced anagen phase (Figure 3A).

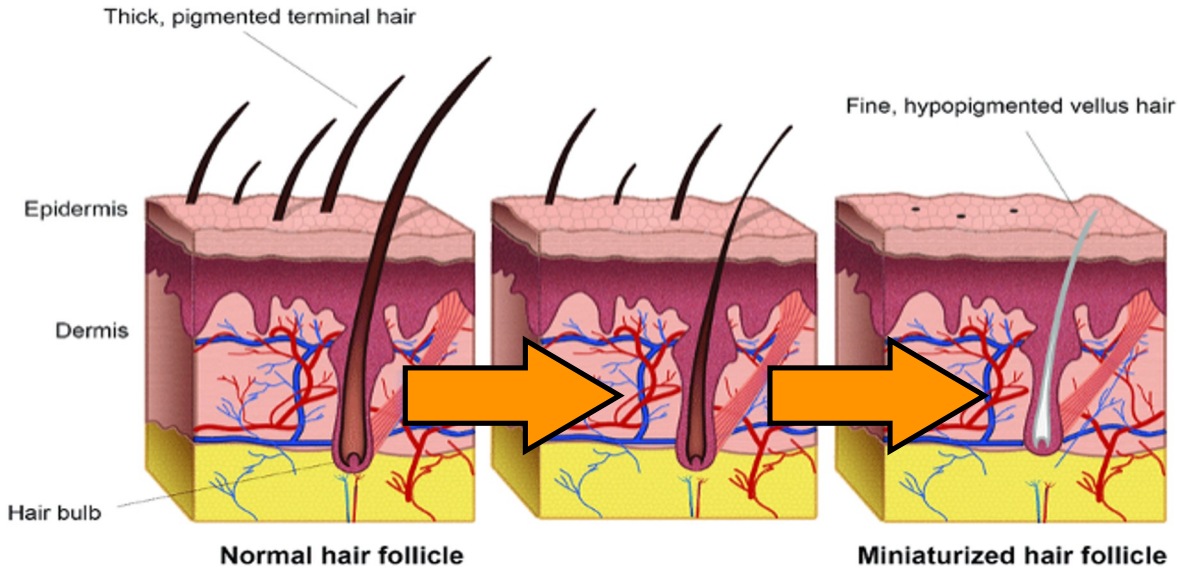


Figure 3A, Progression of AGA, notice the regression of the supportive blood vessels underneath the hair follicle

References: Runnsjö A, et al., J Pharm Sci. 2022 May;111(5):1309-1317. Martinez-Jacobo L, et al., Indian J Dermatol Venereol Leprol. 2018 May-Jun;84(3):263-268. Cardoso CO, et al., Clin Cosmet Investig Dermatol. 2021 May 12;14:485-499. Man XY et al., Clin Exp Dermatol. 2009 Apr;34(3):396-401. Sinclair R, Torkamani N, Jones L. F1000Res. 2015 Aug 19;4(F1000 Faculty Rev):585. Follicum data on file

A proprietary small peptide designed for topical use

The drug candidate FOL005 is a small peptide deigned for hair growth regulation through topical administration with a unique proprietary formulation (Figure 4A). The small peptide is based on a modified part of the endogenous human structural protein osteopontin, a glycoprotein expressed by many tissues, among these also the hair follicle, bone and involved in inflammatory processes. The sequence is based on natural amino acids and was slightly modified to optimize the hair growth stimulating properties and binds specifically to neuropilin-1 (NRP-1), with a stimulating (agonistic) activity.

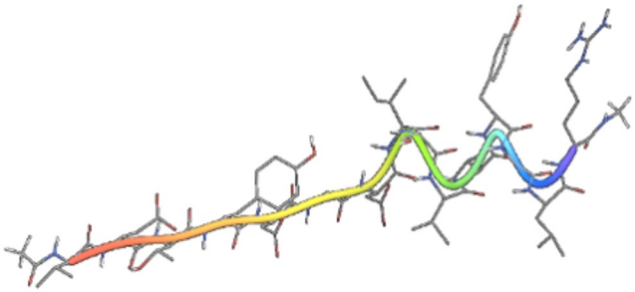


Figure 4A, Schematic 3D model of FOL005

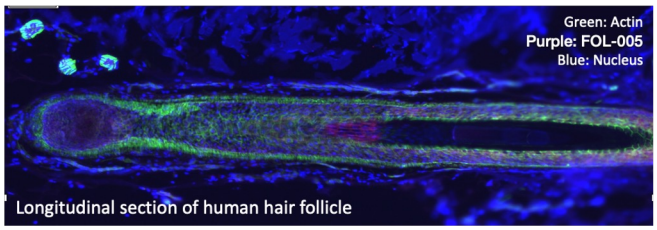


Figure 4B, In vivo studies showing high affinity of FOL005 to hair follicles after systemic administration in mice.

Studies in mice with systemic administration of FOL005 showed accumulation of FOL005 in the hair follicles (Fig 4B). A unique topical formulation with FOL005 applied once daily induces hair growth comparable to minoxidil applied twice daily (Figure 5A). However, only in the FOL005-group a full hair growth was achieved with FOL005 as compared to minoxidil and control groups (Figure 5B & 5C).

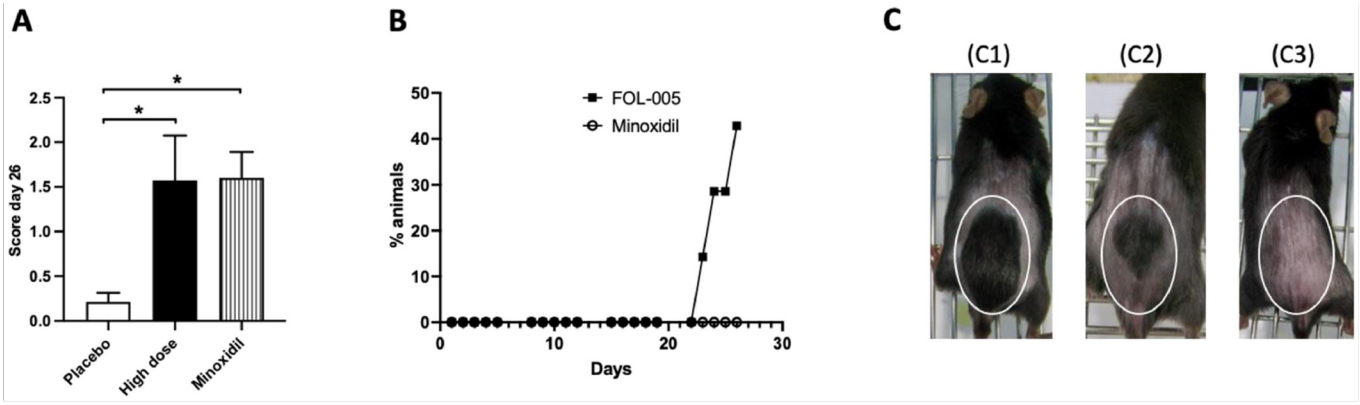


Figure 5, A) topical administered once daily showed a similar hair growth stimulation potential as topical minoxidil when administered twice daily, B) and only in the FOL005 group full hair growth score was achieved, C) representative images of FOL005, minoxidil and control groups.

References: Runnsjö A, et al., J Pharm Sci. 2022 May;111(5):1309-1317. Alam M, et al., Br J Dermatol. 2020 Jun;182(6):1404-1414.

The role of neuropilin-1 in the skin and hair follicle

FOL005 has a unique and novel mode-of-action binding specifically to neuropilin-1 (NRP-1), with a stimulating effect (agonistic activity). NRP-1 is highly expressed in endothelial cells, fibroblasts and outer root sheath cells identified in hair follicles (Figure 2A, 2B) and plays a key role in reactivating the hair follicle likely through stimulation of stem cells in the hair follicle (outer and inner root sheath cells), stimulation of the supportive tissue with new blood vessels (endothelial cells), stimulating the muscle cells supporting the hair follicle (smooth muscle cells), and regeneration of the tissue (fibroblasts).

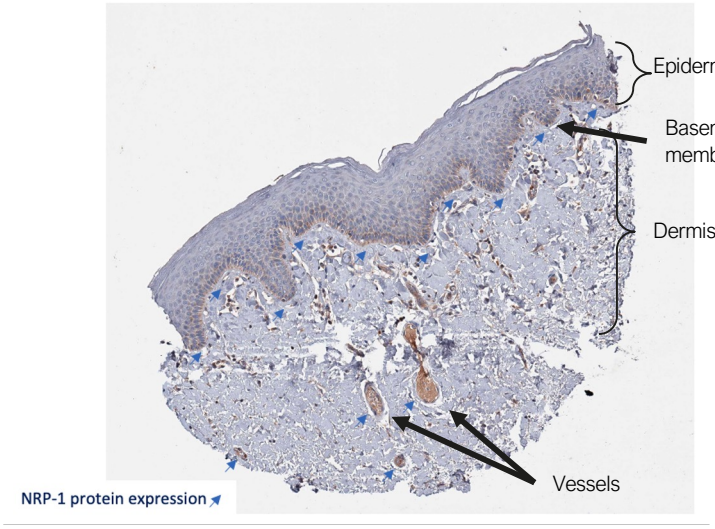


Figure 2A, section of normal skin, epidermis is the upper layer of the skin, dermis is the lower layer of the skin, the basement membrane is dividing these two skin layers with stem cells. In the dermis the skin is vascularized with vessels. The blue arrows show the brown color of NRP-1

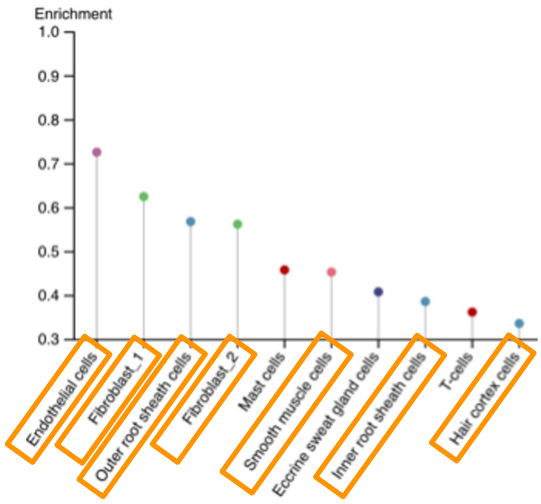


Figure 2B, expression of NRP-1 in specific cells. The highest expression is found in vessel cells, fibroblasts and cells in and around the hair follicle (highlighted in orange)

New blood vessels often form by branching off from existing vessels. One key protein that stimulates this branching process is vascular endothelial growth factor (or VEGF for short). To activate VEGF several 'receptor' proteins found on the outside of cells must bind to VEGF. NRP-1 is one and with FOL005 an activation of VEGF is happening to form new blood vessels. However, not only formation of new blood vessels can be caused by VEGF, but also an activation of anagen hair follicles likely causing stimulation of hair growth and increase in hair follicle and hair size.

References:
The Human protein atlas
Yano K, Brown LF, Detmar M. Control of hair growth and follicle size by VEGF-mediated angiogenesis. J Clin Invest. 2001 Feb;107(4):409-17.

Man XY, et al., Expression and localization of vascular endothelial growth factor and vascular endothelial growth factor receptor-2 in human epidermal appendages: a comparison study by immunofluorescence. Clin Exp Dermatol. 2009 Apr;34(3):396-401. Follicum data on file

A specific mode of action through activation of NRP-1

The target receptor for FOL005 is neuropilin-1 (NRP-1). NRP-1 is a co-receptor to many growth factor receptors and important proteins (semaphorins). NRP-1 must bind to a protein in the cell membrane for a signal to occur and hence to have a function (it is a so-called co-receptor).

FOL005 has shown to specifically to bind NRP-1 and act as a co-receptor, and one of the important proteins that can be activated is VEGF, resulting in development of new blood vessels, stimulation of stem cells in the hair follicle, and stimulation of fibroblasts, resulting in stimulation of hair growth, tissue regeneration and anti-fibrotic properties.

In conclusion, FOL005 binds strongly to the outer and inner root sheath cells within the hair follicle, stimulate vessel formation and acting anti-fibrotic resulting in tissue regeneration and activation of hair growth (Figure 3B).

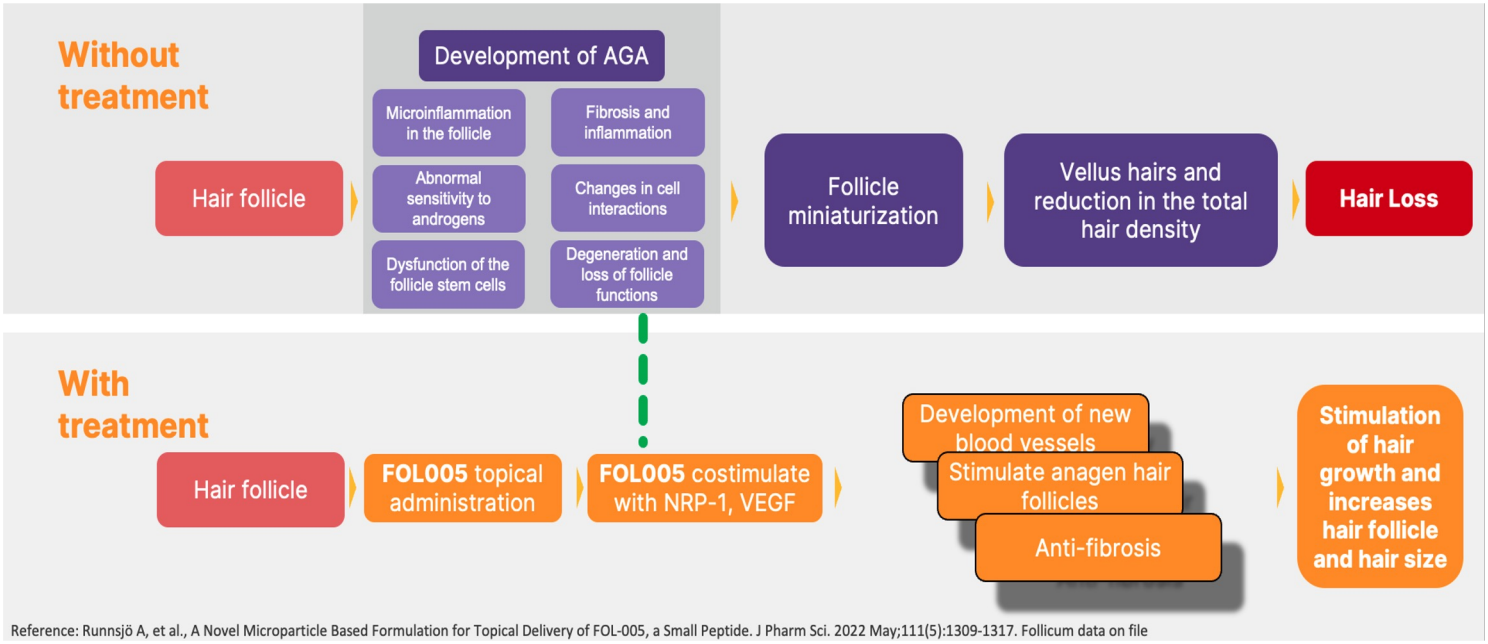


Figure 3B, suggested mode-of-action of FOL005 in AGA

References: Runnsjö A, et al., J Pharm Sci. 2022 May;111(5):1309-1317. Martinez-Jacobo L, et al., Indian J Dermatol Venereol Leprol. 2018 May-Jun;84(3):263-268. Cardoso CO, et al., Clin Cosmet Investig Dermatol. 2021 May 12;14:485-499. Man XY et al., Clin Exp Dermatol. 2009 Apr;34(3):396-401. Follicum data on file

Novel and cosmetically attractive formulation

A novel patent protected formulation has been developed for FOL005 securing good skin penetration and distribution of FOL005 in the epidermis and hair follicles. The cosmetic properties are suitable for application on the scalp and can be used in both men and women. The formulation type is a light ointment with pharmacopoeia excipients, with cream-like or lotion-like feeling and has an attractive perception and easiness of use. In the formulation FOL005 is stable at room temperature up to 2 years. The patented formulation provides patent protection until 2039. Furthermore, the unique formulation has also shown to benefit other small peptides in penetrating the skin.

Strong patent protection beyond 2040

Follicum has a strong foundation of patents providing solid market protection until 2040. There are two key patents: firstly, the composition of matter of FOL005 and its use to stimulate hair growth (WO2013021212) which is granted in all major markets and secondly, the unique topical formulation of FOL005 enabling the peptide to penetrate the skin (PCT/EP2020/061453). In addition, a priority application has been submitted for the use of FOL005 in wound healing in May 2022. All patents are submitted in major markets including the US, Europe, Canada, Australia, Japan, China and India.

Completed Clinical trials

Three clinical trials have been conducted (FCS-001, FCS-002, and FCS-003), with subcutaneous (s.c.) and topical formulations (Table 2A). The FOL005 s.c. and topical formulations were both found to be safe and tolerable, and efficacy in growth of the number of hairs was further shown in all studies.

	FCS-001*		FCS-002**	FCS-003***
Study	Phase I	Phase IIa	Phase IIa	Phase IIa
Purpose	Safety	Safety Efficacy – hair density	Safety Efficacy – hair density	Safety Efficacy – hair density
Area	Thighs	Thighs	Scalp	Scalp
Treatment	Injections Single ascending 4 doses	S.c. Injections Ascending up to x3/week 3 months 4 doses (5, 25, 125, 250 ng, vehicle)	S.c. Injections 3 times/week 3 months 4 doses	Topical Daily/weekly 4 months 3 doses (0.1%, 0.5%, 1.5% + vehicle)
Subjects	10 Males	30 Males	Androgenetic Alopecia 60 Males	Androgenetic Alopecia 210 Males****
Year	2016	2017	2018	2019-2022*****

Table 2A, Overview of completed (FCS-001-003)

*FCS-001: A randomized, double-blind, placebo-controlled phase I/IIa trial of FOL005 to investigate clinical safety and effect on hair growth in healthy volunteers

**FCS-002: A randomized, double-blind, placebo-controlled phase IIa trial of FOL005 to investigate efficacy on hair growth on scalp skin in alopecia subjects

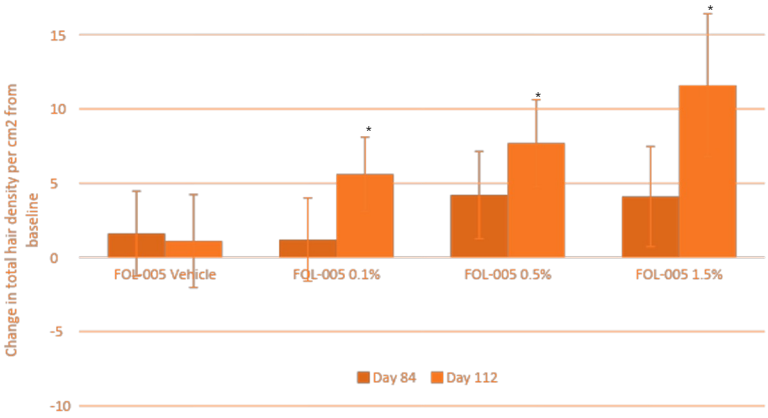
***FCS-003: A randomized, double-blind, vehicle-controlled, dose-finding, multi-center, phase IIa trial of FOL005 topical formulations to investigate hair growth potential and safety in healthy male volunteers

****In total 199 patients were treated per protocol, of which 89 patients (45%) had a hair density below 255 hairs/cm^2

*****Timeline impact due to COVID-19 pandemic

Latest Completed Clinical trials

A. Change in total hair density

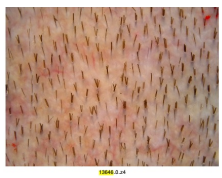


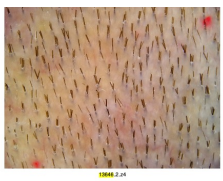
In the FCS-003 study in a sub-population of patients with a hair density of less than 255 hair/cm^2 a dose response effect was observed for FOL005. Furthermore, FOL005 1.5% dose was on par with treatment effect reported for minoxidil and finasteride with a growth of 12 hairs/cm^2 after 4 months of treatment (Figure 7A), and representative pictures (Figure 7B), however with more than 60% of subjects responding to treatment (Figure 7C) compared to competitors where 40% responders effect is previously documented after 4 months (Table 4).

B. Representative trichogram images

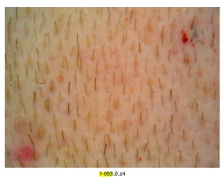
Day 1 (Baseline) **Day 112 (End of Treatment)**

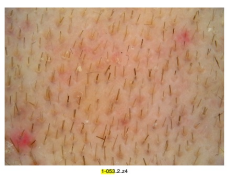
FOL-005 1.5%
Difference in total hair counts 12 hairs/cm2
and non-vellus hair counts 12 hairs/cm2
Baseline counts 200 hairs/cm2 and
Day 112 212 hairs/cm2



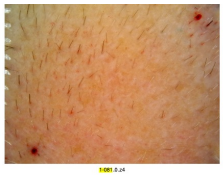


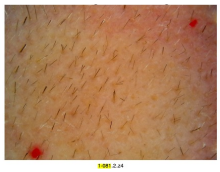
FOL-005 0.5%
Difference in total hair counts 7 hairs/cm2
and non-vellus hair counts 12 hairs/cm2
Baseline counts 252 hairs/cm2 and
Day 112 259 hairs/cm2



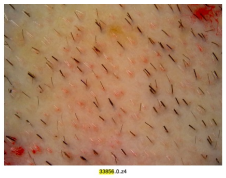


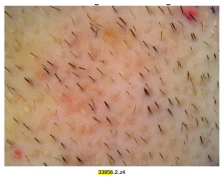
FOL-005 0.1%
Difference in total hair counts 5 hairs/cm2
and non-vellus hair counts 13 hairs/cm2
Baseline counts 245 hairs/cm2 and
Day 112 251 hairs/cm2





FOL-005-Vehicle
Difference in total hair counts 0 hairs/cm2
and non-vellus hair counts -9 hairs/cm2
Baseline counts 223 hairs/cm2 and
Day 112 223 hairs/cm2





C. Responders to treatment

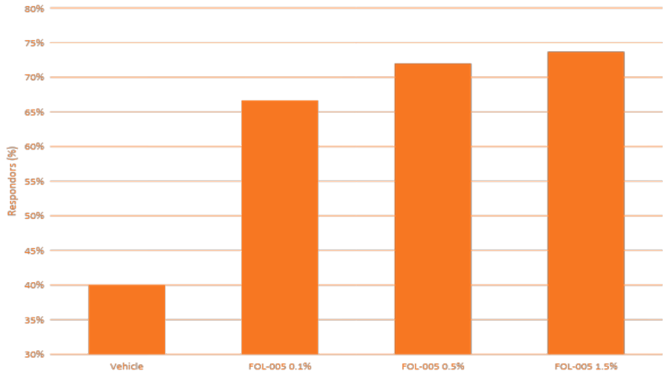


Figure 7, FCS-003, Total hair density, subset of subjects with a total hair density lower than 255 hairs/cm^2 at baseline, +/-SEM (* p<0.05), per protocol population A. Dosis-dependent effect, and B. responders to treatment.

Clinical efficacy as compared to existing therapies

FOL005 has been shown to be safe and tolerable, and in the phase IIa clinical trial (FCS-003), the drug demonstrated efficacy with once daily topical administration on par with long term treatment with the competitors minoxidil and finasteride (Table 4).

Compound	Publication	# subjects	Change in Hair Density
minoxidil (twice daily)	D. H. Rushton et al 1989 *Quantitative assessment of 2 % topical minoxidil in the treatment of male pattern baldness*	47 (12)	6 months 12 months 7 hairs/cm^2 4 hairs/cm^2
minoxidil (twice daily)	Olsen at al 2002 *A randomized clinical trial of 5% topical minoxidil versus 2% topical minoxidil and placebo in the treatment of androgenetic alopecia in men*	5%: 139 2%: 142	11 months 18.6 hairs/cm^2 12.7 hairs/cm^2
finasteride (once daily)	D. Van Neste et al 2000 *Finasteride increases anagen hair in men with androgen alopecia*	93	11 months 7 hairs/cm^2
FOL005 FSC-001 (2/3 times/week 3M)	Intradermal injections 2 or 3 times weekly for 3 months. Treatment area on forefront of thighs. FCS- 001, 2017	31	3 months 8%
FOL005 FSC-002 (3 times/week 3M)	Intradermal injections 3 times weekly for 3 months. FCS-002, 2018	23	3 months 6 hairs/cm^2
FOL005 FSC-003 (Once Daily 4M)	Topical application once daily for 4 months, FCD-003, 2022	210 ITT* / 199 PP* 89 PP/<255 hair/cm^2	4 months FOL005 1.5% 12 hairs/cm^2

Table 4, Overview of existing efficacy data on competitors compared with FOL005.

Key benefits

- First hair loss product with well-defined and novel Mode of Action
- Efficacious and safe hair growth stimulator in men and women
- Equal or better efficacy than existing marketed products
- Higher number of responders than minoxidil and finasteride
- An attractive topical formulation initially for the Rx market with OTC switch possible
- Less frequent administrations than minoxidil

Next clinical trial designed to demonstrate the full potential

Future studies planned include a phase IIb, where the final treatment dose is confirmed, furthermore NRP-1 as a biomarker for responders will be included, and a sub-group of women (non-child birth potential or using contraceptives) will be also included. If the signal in women is positive an equal distribution of men and women is planned in phase III.

The treatment duration will also be prolonged up to 9 months, hence an extended preclinical tolerability study is planned in 2023 (Table 2B).

		FCS-004	FCS-005-7
Study	MA preclinical	Phase IIb	Phase III, Three geographies (EU, USA,JP)
Purpose	Preclinical studies in minipigs	Efficacy – hair density Safety Biomarker (NRP-1)	Efficacy – hair density Safety
Area	Topical	Scalp	Scalp
Treatment	Topical 9 months 2 doses (0.5%, 1.5%, and vehicle)	Topical Daily 12 months 2 doses (0.5%, 1.5%, and vehicle)	Topical Daily 6-12 months 1 dose (TBD, and vehicle)
Subjects	Minipigs	Androgenetic Alopecia Estimated 210 males and females in a subpopulation	Androgenetic Alopecia Est. 700 males and females
Year	2023 / 2024	2025	2026 / 2027

Table 2B, Overview of planned pre-clinical and clinical studies (FCS-004-007)

Potential in the treatment of chronic wounds

FOL005 is based on a modified part of the protein osteopontin, which is upregulated during wound healing. Osteopontin has been shown in vitro to stimulate the migration of stem cells (mesenchymal) to a skin wound and cause the stem cells to differentiate into keratinocytes and endothelial cells.

Furthermore, novel human in situ data on topical application of FOL005 on wounds has shown to induce significant effects on wound healing. A significant re-epithelization was demonstrated by increase in the wound tongue length and area (Figure 6).

Impaired healing in diabetes is the result of a complex disease involving components like decreased cell growth and vascularization. The latter results in the immune cells not being to enter the area not being able to fight bacterial, fungal and viral infections in the wound, hence often serious infections may occur.

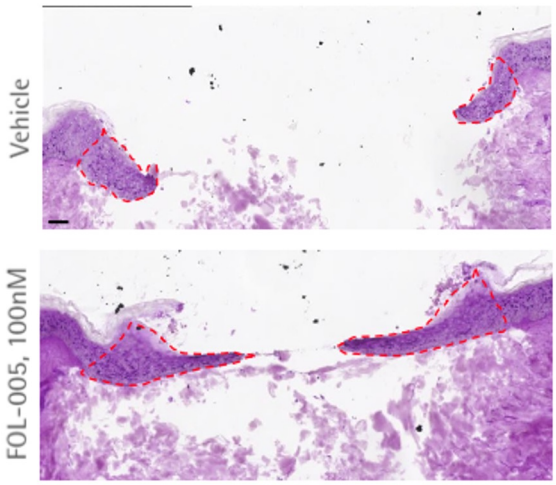


Figure 6, FOL005 topical administered once daily showed wound healing in biopsies from patients, bar 50um

Diabetic patients have a 15–25% lifetime risk of developing diabetic foot ulcers, of which 40–80% become severely infected, and a high number of the severe cases require hospitalization and surgical intervention with amputation of the affected body part. In addition, the rate of recurrence of a foot ulcer is greater than 50% after 3 years from the first episode.

For this reason, impaired wound healing in diabetic patients represents a major healthcare issue and a significant economic burden. Notably, costs for diabetic foot ulcerations treatment are additive with general costs for diabetes care and are on the rise with the increased incidence and prevalence of the disease. The total medical cost for the management of diabetic foot disease in the United States (US) ranges from US$9 to US$13 billion in addition to the cost for management of diabetes alone.

The treatment options are limited, and safe and effective drugs used are minimal, hence a large unmet need for safe and effective treatments are warranted.

In conclusion there is a strong rational to further develop FOL005 for diabetic wounds. A phase IIa clinical study in diabetic foot ulcers stage 1-2 is hence planned to show that FOL005 is safe and shows signs of effectiveness. The mode-of-action is likely to be stimulation of cell proliferation and re-vascularization, leading to direct healing but also secondary effects on infectious parameters as infiltrating immune cells may clear up the local infection in patients.

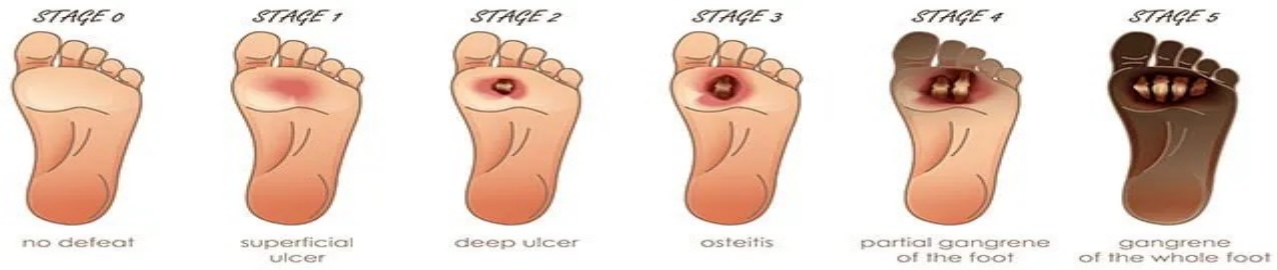


Figure 8, Different stages of diabetic foot ulcers

References:
Wang W, Li P, Li W, Jiang J, Cui Y, Li S, Wang Z. Osteopontin activates mesenchymal stem cells to repair skin wound. PLoS One. 2017 Sep 28;12(9):e0185346.
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Spampinato SF, Caruso GI, De Pasquale R, Sortino MA, Merlo S. The Treatment of Impaired Wound Healing in Diabetes: Looking among Old Drugs. Pharmaceuticals (Basel). 2020 Apr 1;13(4):60.
Follicum data on file.

Current and previous World Leading Scientific Advisors and Collaborators

FOL005 was developed by Professor Anna Hultgårdh Nilsson, Lund University in collaboration with LU Bioscience AB. Furthermore, Professor Jan Nilsson is active in progressing the mode-of-action of FOL005 at Lund University and in collaboration with Shanghai Changzheng Hospital, China. Furthermore, the topical formulation is very unique being able to ensure peptide delivery to the skin, recently published (Runnsjö, 2022). This work is supported by strong global patents in place and with protection to 2039. Over time several world leading scientists has been involved in the work with FOL005 (Table 3).

Reference: Runnsjö A, et al., A Novel Microparticle Based Formulation for Topical Delivery of FOL-005, a Small Peptide. J Pharm Sci. 2022 May;111(5):1309-1317.

	**Professor Anna Hultgårdh Nilsson Lund University.** She holds a PhD in Medical Cell Biology from the Karolinska Institute. After a post doc position at Cedars-Sinai Medical Centre, University of California Los Angeles she returned to the Karolinska Institute where she studied the importance of the vascular smooth muscle cell in the onset of atherosclerosis. In 1998 Professor Hultgårdh Nilsson moved to Lund University and has continued to analyze cell and molecular mechanisms in the atherosclerotic process.
	**Dr Jan Nilsson has been a Professor of Medicine at the Department of Clinical Sciences, Lund University** since joining their faculty in 1998. Throughout his scientific career, his research has focused on the regulation of smooth muscle cell proliferation and the inflammatory response of the vascular wall to oxidized lipoprotein and mechanical injury. In recent years, his main research projects have focused on the role of immune responses against oxidized LDL antigens in atherosclerosis. He has published over 300 papers in vascular cell biology and atherosclerotic research. He is currently a member of the editorial board for Atherosclerosis, Thrombosis and Vascular Biology and was elected member of the Royal Swedish Academy of Sciences in 2015.
	**Professor Ralf Paus is currently the Head of Experimental Dermatology at the University of Luebeck, Germany**, and Professor of Cutaneous Medicine at the University of Manchester, UK. Professor Paus has studied the biology and pathology of the hair follicle for many years and is a world leader in this field. Professor Paus is particularly interested in understanding the molecular mechanisms that control hair follicle function in the development of diseases such as alopecia.
	**Dr Maria Kasper is a research scientist at the Karolinska Institute in Sweden.** Her research is focused on hair follicles, where she and her team study the molecular mechanisms behind the regulation of cell division. It is an excellent model for understanding both how cancer arises and how skin wounds heal. Dr Kasper has received several awards for her research, such as the Ragnar Söderberg's Institute and the Cancer Foundation's prize "Young Investigator Award".
	**Professor Amos Gilhar is Professor Emeritus at the Department of Medicine at the Technion Israel Institute of Technology.** Professor Gilhar has worked in the field of immune dermatology for the last three decades, where he has been successful in developing humanized mouse models. These are used today in the pre-clinical trials for testing the efficacy of new drugs, especially in relation to the modulation of hair growth. His area of expertise includes research on skin autoimmune diseases such as alopecia areata.
	**Dr Ulrike Blume-Peytavi is Professor and Executive Medical Director at the Department of Dermatology and Allergy,** and a Director of the Clinical Research Centre for Hair and Skin Science (CRC) and the Pediatric Dermatology Unit at the Charité-Universitätsmedizin in Berlin, Germany. Her clinical research interests include contemporary dermatotherapy, hair disorders associated with hormonal dysregulation and pediatric dermatology. Principal investigator in Follicum clinical studies, FCS-001, FCS-002 and FCS-003.
	**Dr Gerd Lindner is a renowned hair-biology-expert at the Technische Universität Berlin,** where he heads a hair and skin biology project group. His research focuses on the generation and characterization of human in-vitro organ models, with a recent emphasis on the integration of hair follicles into human skin. Dr Lindner's research is in the area of hair growth disorders, where he is studying the science and applications of stem cells in the skin and other organs.

Table 3, Overview of current and past scientific advisors and collaborators

Next steps – costs, partnering and out-licensing

Roadmap until 2025

The primary objective of Follicum will be to develop FOL005 for the treatment of hair loss and secondarily to develop FOL005 for the treatment of diabetic wounds. The planning of clinical trials is ongoing and depending on design of these studies and appropriate funding, we currently predict the following key milestones until the end of 2025:

Hair loss (andro-genetic alopecia) - preliminary milestones

- 1H 2024: Finalization of pre-clinical 9 months tolerability testing
- 2H 2023: Key partners identified for funding and development of FOL005
- 2H 2024: First patient in phase IIb study (FCS-004) in hair loss.
- 1H 2026: Key results of phase IIb FCS-004
- 1H 2026: Scientific Advice meetings to prepare phase III pivotal program

Wound healing – preliminary milestones

- 1H 2024: First patient in phase II study (FCS-008) in chronic wounds.
- 1H 2025: Key results of phase II FCS-008

Capital Demand

The goal is to identify a VC or co-development partner for financing the clinical trials with FOL005 in hair loss and in wound healing. Depending on the number of study patients and length of study, we estimate the following clinical cost:

Pre-clinical

- Total cost for the pre-clinical tolerability studies: 9 mSEK.

Phase IIb clinical trial – hair loss

- Total cost of implementation and completion of the phase IIb study: 122 mSEK.

Phase IIa clinical trial wound healing

- Total cost of implementation and completion of phase IIa study: 20 mSEK

Exit strategy

We believe there is a high likelihood of success based on the previous clinical data. The next phase IIb will strongly increase the value of FOL005 and our strategy is to identify a VC or co-development partner to share the risk of further development. Our goal is to make a license or co-development agreement before initiating the phase IIb clinical trial in hair loss.

Management and Board of Directors

Kristian Lykke Fick

Chief Executive Officer & Board Member

- Chief Commercial Officer Coegin Pharma AB.
- Former Head of Corporate Business Development and other VP roles in LEO Pharma A/S incl. President & CEO LEO Pharma Canada.
- B.Sc. Business Administration, and M.Sc. Agricultural Economics.
- Vast experience in commercialization, and business development incl. biotech/pharma partnerships.

Jan Nilsson

Board Member

- Jan Nilsson is a professor at the University of Lund.
- World renowned researcher within diabetes and diabetes complications.
- Deeply involved in the research into Coegin Pharma's peptide technology.
- Led the research leading to the discovery of the unique mode of action behind FOL005.

Lars Persson

Chairman of Board

- Board Member Coegin Pharma AB.
- MSc in Chemistry and has over 25 years of experience from senior positions in MedTech and Venture Capital.
- Senior positions at Atos Medical AB, Stiftelsen Industrifonden and most recently as CEO of Almi Invest Syd AB.
- Currently, full time board member (several companies, e.g. Invent Medic Sweden AB).
- Vast experience in venture capital, financing incl. exits.

Jens Eriksson

Board Member

- MSc in financing, BSc in biomedical engineering and EFL executive education
- Biotech investor and senior consultant with focus on communication and business development.
- Long experience as a leader of large retail companies. Currently CEO of Arver, the largest privately owned Scania retailer in Sweden.
- Key skills in business development, mergers, rationalization, marketing strategy and human resources

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