KAROLINSKA DEVELOPMENT

YEAR-END REPORT
Jan – Dec 2022

Q4

Karolinska Development

Karolinska Development (Nasdaq Stockholm: KDEV) is an investment company which offers a unique opportunity to participate in the growth in value of a number of Nordic life sciences companies with substantial commercial opportunities. All of the portfolio companies are developing potentially ground-breaking treatments for medical conditions with a substantial need for improved therapies, including leukaemia, serious viral infections, sepsis and systemic inflammation, bone defects, and hepatic encephalopathy. To date, two of the companies have launched their first products.

For further information, see www.karolinskadevelopment.com

Financial Update

Fourth quarter

- The net profit/loss for the fourth quarter was SEK 10.0 million (SEK -19.5 million in the fourth quarter of 2021). Earnings per share totaled SEK 0.04 (SEK -0.11 in the fourth quarter of 2021).
- The result of the Change in fair value of shares in portfolio companies for the fourth quarter amounted to SEK 15.3 million (SEK -16.8 million in the fourth quarter of 2021). The result is largely due to the upturn in share price in the listed holdings OssDsign and Modus.
- The total fair value of the portfolio was SEK 1,312.5 million at the end of December 2022, corresponding to an increase of SEK 29.1 million from SEK 1,283.4 million at the end of the previous quarter. The net portfolio fair value at that time was SEK 984.0 million, corresponding to an increase of SEK 31.0 million from SEK 953.0 million at the end of the previous quarter. The increase is mainly the effect of investments during the quarter and the upturn in share price of listed holdings.
- Net asset value amounted to SEK 1,249.1 million, per share SEK 4.6, at the end of December 2022 (SEK 978.0 million, per share SEK 5.6 at the end of December 2021).
- Net sales totaled SEK 0.6 million during the fourth quarter of 2022 (SEK 0.5 million during the fourth quarter of 2021).
- Karolinska Development invested a total of SEK 15.6 million in portfolio companies during the fourth quarter of 2022. Fourth quarter investments in portfolio companies by Karolinska Development and other specialized life sciences investors totaled SEK 122.5 million.
- Cash and cash equivalents (including short-term investments) decreased by SEK 17.2 million during the fourth quarter, totaling SEK 189.8 million on 31 December 2022 (SEK 92,4 million on December 31, 2021).

Full year

- The full-year net profit/loss was SEK -88.1 million (SEK 170.8 million in 2021). Earnings per share totalled SEK -0.34 (SEK 0.97 in 2021).

- The full-year result for the change in the fair value of the portfolio amounted to SEK -76.1 million (SEK 223.2 million during 2021).
- The total fair value of the portfolio was SEK 1,312.5 million at the end of December 2022, an increase from SEK 1,293.1 million at the corresponding date in 2021. The net portfolio fair value was SEK 984.0 million, an increase by SEK 33.8 million from SEK 950.2 million at the corresponding date in 2021.
- Net asset value amounted to SEK 1,249.1 million, per share SEK 4.6, at the end of December 2022 (SEK 978.0 million, per share SEK 5.6 at the end of December 2021).
- Revenue totalled SEK 2.3 million for the full year of 2022 (SEK 2.2 million in 2021).
- Karolinska Development invested a total of SEK 110.3 (69.2) million in its portfolio companies during the full year. Full-year investments in the portfolio companies by Karolinska Development and other specialised life sciences investors totalled SEK 464.9 (455.5) million.
- Karolinska Development's cash compensation from earn-out agreements regarding divested portfolio companies amounted to SEK 5.4 (56.4) million during the year.
- Cash and cash equivalents (including short-term investments) increased by SEK 97.4 million during the full year, totalling SEK 189.8 (92.4) million on 31 December 2022.
- The Board does not propose any dividend for the financial year 2022.

Significant events during the fourth quarter

- Karolinska Development announced its participation in a seed financing of Henlez, a privately owned Danish company focusing on a development project directed towards the chronic dermatological condition hidradenitis suppurativa. The global market for treatments of hidradenitis suppurativa is projected to reach USD 1.8 billion by 2028 (October 2022).
- The portfolio company OssDsign completed a directed share issue of approximately SEK 65.6 million to a number of reputable institutional investors, including Adrigo Small & Midcap and Lancelot Asset Management. Karolinska Development is one of the major shareholders in OssDsign and subscribed its pro-rata share in the issue for an amount of approximately SEK 7.2 million. The purpose of the issue is to fund OssDsign's continued efforts to build a global bone graft business, accelerate growth in the US, expand the product portfolio and advance the clinical programs (November 2022).
- The portfolio company OssDsign presented updated post-market surveillance from a long-term follow-up of OssDsign Cranial PSI, which is used in the treatment of cranial bone defects. The outcome exceeds previous follow-ups and highlights the exceptional performance of OssDsign Cranial PSI (December 2022).
- The portfolio company Dilafor enrolled the last patient to an extension of the clinical phase 2b trial with its drug candidate tafoxiparin, which generated positive results in June 2021. The purpose of the extension study is to document the effect of tafoxiparin at further doses (December 2022).

Significant post-period events

- The portfolio company Umecrine Cognition presented promising preclinical data of the company's most advanced drug candidate golexanolone in a widely used model of Parkinson's disease. The results indicate that golexanolone could improve several symptoms of Parkinson's disease and further increase the understanding of the drug candidate's potential role in treating this progressive and debilitating central nervous system disease (January 2023).
- The portfolio company OssDsign published the first case report on a patient that underwent spinal fusion surgery with OssDsign Catalyst in the TOP FUSION study. The article is published in the Biomedical Journal of Scientific & Technical Research and shows a complete spinal fusion six months after the surgery (January 2023).
- The portfolio company Aprea Therapeutics dosed the first patient in a clinical phase 1/2a study of the drug candidate ATRN-119, which is being evaluated as a treatment for advanced solid tumors by affecting a signaling pathway important for tumor DNA repair (January 2023).
- The portfolio company Umecrine Cognition was granted Orphan Drug Designation by the U.S. Food & Drug Administration (FDA) for the company's most advanced drug candidate golexanolone in Primary Biliary Cholangitis (PBC). The designation will play a vital role in the planned clinical development of golexanolone (January 2023).
- The portfolio company Dilafor reported positive results from the extension of the clinical phase 2b study of the drug candidate tafoxiparin. The extension part of the study included 164 women and the results show a positive effect on cervical ripening and a clear dose-response relationship for the evaluated doses (February 2023).

Viktor Drvota, CEO of Karolinska Development, comments:

"Our portfolio expanded during the last quarter of 2022 in the form of the Danish life science company, Henlez. OssDsign, meanwhile, presented a number of achievements that were well-received by the stock market, shortly after the end of the quarter, Umecrine Cognition reported promising results for golexanolone in a preclinical model of Parkinson's disease", and just a few days ago we were able to rejoice the positive results in Dilafor's extension study of tafoxiparin - a message of strength for the drug candidate's continued development."

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Chief Executive's Report

In the final quarter of 2022, Karolinska Development added another company to its portfolio through an investment in the Danish life science company, Henlez. OssDsign, meanwhile, presented a number of achievements that were very well received by the stock market, and further strengthened its position through a successful directed share issue. The new year began in the same positive spirit – Dilafor presented positive results from the extension of its phase 2 study of their candidate drug, tafoxiparin, and Umecrine Cognition reported new preclinical results demonstrating that the company's candidate drug, golexanolone, offers potential as a treatment for Parkinson's disease.

New investment in Henlez

In late October, Karolinska Development completed an investment in the Danish dermatology company, Henlez, which is developing a product to treat hidradenitis suppurativa – a chronic inflammatory condition that is highly stigmatising and which is characterised by severe pain, malodorous drainage, and permanent scarring of predilection locations such as the armpits and groin. The global market for treatments of hidradenitis suppurativa is estimated to reach USD 1.8 billion by 2028.

Our investment in Henlez totals EUR 0.5 million and was made in syndication with the highly respected specialist investor, Eir Ventures, who invested the same amount. Henlez has thereby secured sufficient financing both for the development of a topical application formulation for their candidate product ahead of the forthcoming clinical evaluation, and an expansion of the patent portfolio.

Significant progress for OssDsign

Revenues generated by our portfolio company, OssDsign, continue to increase and it is becoming ever more apparent that the company's most recently launched product, OssDsign Catalyst, has enormous growth potential. A recently published case study shows complete spinal fusion as little as six months after arthrodesis using this unique nanosynthetic bone graft. The Catalyst portfolio was expanded in the fourth quarter in the form of a new product designed for use in several different types of surgical intervention. Positive results were also reported from a long-term follow up, showing a total lack of complications after treatment with Catalyst. The company's OssDsign Cranial PSI product, which is used in the treatment of cranial bone defects, also continues to show low complication levels: new data from a long-term follow-up presented in December showed that the frequency of infections leading to the removal of the implant was a mere 1.4%, which is an even lower level than that observed in previous follow-ups. OssDsign's financial position was strengthened by a successful directed share issue in which Karolinska Development took part, along with other investors such as Adrigo Small & Midcap and Lancelot Asset Management, and OssDsign is consequently well-positioned for its ongoing efforts to commercialise its products.

Interesting new preclinical data for Umecrine Cognition's candidate drug

Shortly after the end of the fourth quarter, Umecrine Cognition, who are planning to launch a phase 2b study of golexanolone in patients suffering from primary biliary cholangitis (PBC) shortly, presented the results of trials carried out in a well-established preclinical disease model of Parkinson's disease. The results indicate that treatment with golexanolone can improve both motor and non-motor symptoms of this progressive and debilitating CNS disease, and we now look forward to supporting our portfolio company in defining appropriate measures to make the most of these new findings.

Positive results from the extension of Dilafor's phase 2b study

At the end of December, Dilafor announced that the recruitment for the extension of the company's phase 2b study of tafoxiparin had been completed. The extension part of the study aims to document the effect of the drug candidate at additional doses than those previously studied. In February, the results were presented, and we can now state that the treatment has a positive effect on cervical ripening and a clear dose-response relationship for the evaluated doses. This is an important statement of strength for the drug candidate - as the clinical documentation of tafoxiparin is strengthened, the company increases its opportunities to attract commercial partners to this important project, which has the potential to reduce the risk of complications for both mother and child in connection with childbirth. Around 1 in every 4 pregnant women require a planned start of labour, but the current standard treatment fails in up to 30% of cases, increasing the risk of protracted labour, emergency caesareans, or other complications for mother and child. Market analyses show that a drug that has a positive effect on cervical ripening has the potential to achieve annual sales more than USD 1 billion in the US market alone. Our aim is to sell our portfolio companies or to enter into partnerships with major pharmaceutical companies, after a completed phase 2b study with proven treatment effect This also applies to Dilafor.

A strong 2022 paves the way for ongoing value creation

We can now look back on a successful 2022 when we expanded our investment portfolio with a further two companies, took part in several successful financing rounds in partnership with other highly reputed specialist investors, and continued to note significant progress on the part of our portfolio companies. We are looking forward, in 2023, to the results of several clinical trials of innovative candidate drugs and further commercial successes for those of our companies who have already launched their products onto the global market.

Solna, 17 February 2023

Viktor Drvota
Chief Executive Officer

Portfolio Companies

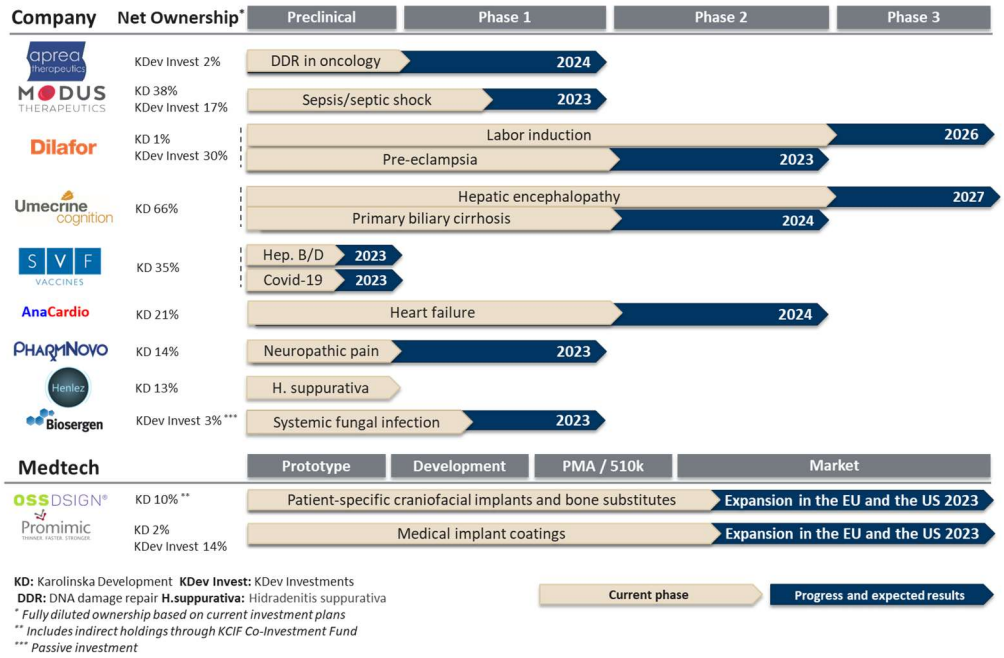
High potential for continued value inflection in portfolio

Karolinska Development's investments in therapeutic companies are conducted in syndicates with other professional life science investors, normally until proof-of-concept is demonstrated in phase 2 trials, at which point different exit options are evaluated. When engaging in medtech companies, the business model is to finance the companies until they show a positive operating profit.

The portfolio currently consists of eleven companies focused on developing innovative treatment methods for severe or life-threatening diseases where there is currently a great need and there is a lack of effective treatment alternatives. Nine of the portfolio companies have drug candidates in ongoing or planned clinical trials and two companies have medtech products in early commercial phases. During the period 2023–2024, four portfolio companies are expected to present data from phase 1 studies and three portfolio companies are expected to present data from phase 2 studies. These study results have the potential to significantly increase the opportunities for attractive divestments or license transactions. Comparable drug candidates have in recent years been out licensed or sold at contract values that have amounted to billions for the individual projects.

In addition to the portfolio companies, Karolinska Development has interests in two other life science companies, Forendo Pharma and Oncopeptides, in the form of earn-out agreements.

Our current portfolio – potential for value inflection



Project (First-in class)
ATR inhibitor ATRN-119
ATR inhibitor ATRN-W1051

Primary indication
Solid tumor malignancies

Development phase
Phase 1

Holding in company*
KDev Investments 2%

Other investors
Morgan Stanley
Vangaurd Group
Renaissance Technologies
BlackRock
Geode Capital Management

Origin
Karolinska Institutet

More information
aprea.com

** Fully-diluted ownership based on current investment plans.*

Deal values for similar projects

- USD 469 million MEI Pharma (licensor) & Helsinn Group (licensee) 2016
- USD 483 million Calithera Biosciences (licensor) & Incyte (licensee) 2017

Aprea Therapeutics Inc

Inhibits the ability of cancerous tumors to repair DNA damage

Aprea Therapeutics (Boston, USA and Stockholm, Sweden) is focused on developing and commercializing novel drugs to combat various types of cancer by affecting the proteins involved in the ability of tumors to repair damage in their DNA.

During the second quarter of 2022, Aprea completed the acquisition of Atrin Pharmaceuticals, a biopharmaceutical company focused on developing novel cancer therapeutics targeting proteins in the DNA damage response (DDR). With the acquisition of the Atrin Pharmaceuticals drug project, Aprea shifts its primary focus to the development of ATRN-119, evaluated in a Phase 1/2 clinical trials in patients with malignant solid tumors – both as monotherapy and in combination with today's standard treatment.

ATRN-119 is an orally-bioavailable, highly potent and selective small molecule inhibitor of ATR, a protein with key roles in response to DNA damage. In the third quarter, Aprea initiated a clinical trial with ATRN-119 as monotherapy in cancer patients with defined gene mutations.

Aprea is also developing ATRN-W1051, an orally-bioavailable, highly potent and selective small molecule inhibitor of WEE1, a key regulator of multiple phases of the cell cycle. ATRN-W1051 is currently in preclinical development, and the company expects that an application for the start of the first clinical trial can be submitted in the second half of 2023.

Aprea is listed on the NASDAQ Global Select Market in the USA since October 2019.

The market

Targeting DNA Damage Repair, several commercially available Poly ADP-ribose polymerase (PARP) inhibitors induced substantial objective response in patients with DNA repair defects and have received Breakthrough Therapy Designation by the US Food and Drug Administration, FDA, for several cancer indications. The notable commercial success of these PARP inhibitors has made DNA Damage and Response a clinically and commercially validated therapeutic approach. Targeting ataxia telangiectasia and Rad3-related protein (ATR) represents an emerging strategy to treat a broad spectrum of cancers, most notably those that currently lack fully effective treatments.

Recent progress

- In May 2022, Aprea announced the acquisition of Atrin Pharmaceuticals.
- Following the Annual Shareholders' Meeting on July 28, 2022, Christian S. Schade transitioned to the role of Executive Chairman of the Board of Directors and Oren Gilad was appointed CEO.
- In the third quarter 2022, Aprea´s phase 1/2 clinical trial with ATRN-119 monotherapy was initiated.
- In January 2023, the first patient in the phase 1/2 clinical trial of the drug candidate ATRN-119 was dosed.

MODUS THERAPEUTICS

Project (First-in-class)
Sevuparin

Primary indication
Sepsis/Septic shock

Development phase
Phase 1

Holding in company*
Karolinska Development 38%
KDev Investments 17%

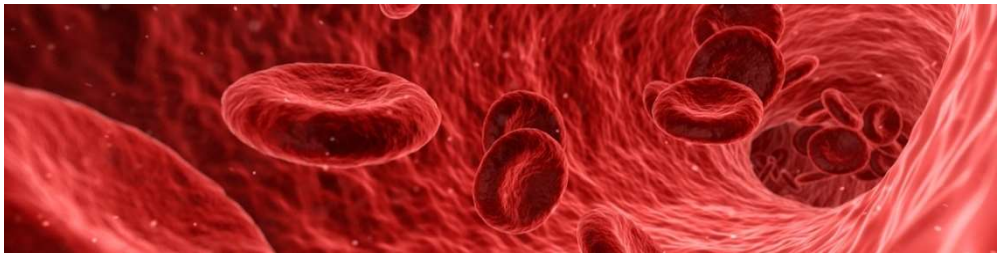
Other investors
John Öhd
Nordnet Pensionsförsäkring
Hans Wigzell

Origin
Karolinska Institutet
Uppsala University

More information
modustx.com

**Fully-diluted ownership based on current investment plans*

Modus Therapeutics AB



Develops treatments against life threatening sepsis/ septic shock

Modus Therapeutics (Stockholm, Sweden) is developing sevuparin as a treatment of sepsis/septic shock, a life-threatening condition that currently lacks efficient pharmaceutical therapies. Patients that are affected by sepsis are exposed to a risk of developing multi-organ failure and – in severe cases – death. Data from pre-clinical animal models as well as in vitro human cell models has revealed that sevuparin was able to protect blood vessels and counteract lung plasma leakage during systemic inflammation. Previous clinical trials in other patient groups have shown that sevuparin is well tolerated and has a favorable safety profile.

In September 2022, the company completed its recruitment for the clinical phase 1b study of sevuparin. The randomized, placebo-controlled study will evaluate the effect of sevuparin on the symptoms in healthy individuals who have had the bacterial toxin lipopolysaccharide (LPS) injected into the skin (local inflammation) and into the blood (systemic inflammation). Data from the phase 1b study will form the basis for the design of a phase 2 study with sevuparin in patients with sepsis, with a planned start in 2023.

The market

Septic shock is a leading cause of death in intensive care units, with mortality rates typically exceeding 30 per cent. There is currently no specific pharmaceutical treatment available for the treatment of sepsis. As a result, it is one of the costliest conditions to treat in the hospital care setting. In 2019, US healthcare costs for patients with sepsis were estimated at USD 23 billion. Sepsis/septic shock is triggered by an infection and causes the same form of severe uncontrolled inflammation that can occur in conjunction with extensive surgery, trauma, burns and autoimmunity.

Recent progress

- In May 2022, Karolinska Development provided bridge financing of up to SEK 11.5 million to ensure that momentum in the company's clinical development is sustained.
- The first patient was included in the phase 1 study evaluating sevuparin in pediatric patients with severe malaria in September 2022. The study is a collaboration with Imperial College, London and Wellcome.
- In September 2022, the company completed its recruitment for the clinical phase 1b LPS challenge study.

Expected milestones

- Results from the phase 1b study (LPS provocation study) are expected in early 2023.
- Phase 2a trial in patients with sepsis with an estimated start during 2023.

Dilafor

Project (First-in-class)
Tafoxiparin

Primary indication
Labor induction
Preeclampsia

Development phase
Phase 2b

Holding in company*
Karolinska Development 1%
KDev Investments 30%

Other investors
Opocrin
The Foundation for Baltic and East European Studies
Lee's Pharmaceutical
Praktikerinvest
Rosetta Capital

Origin
Karolinska Institutet

More information
dilafor.com

** Fully-diluted ownership based on current investment plans.*

Deal values for similar projects

- USD 397 million Velo Bio (seller) & AMAG Pharmaceuticals (buyer) 2018
- USD 465 million Palatin Technologies (licensor) & AMAG Pharmaceuticals (licensee) 2017

Dilafor AB

Reducing complications with prolonged childbirth

Dilafor (Solna, Sweden) is developing tafoxiparin for obstetric indications, with particular reference to protracted labor and associated complications. Up to 30 percent of all pregnant women undergo induction in labor. In just over half of all cases, the induction fails, leading to protracted labor that entails an increased risk for both mother and child due to medical complications. Between 25 and 40 per cent of women who experience protracted labor eventually require an emergency caesarean section. Surgical intervention always entails not only a risk to the patient, but substantial health care costs. With the help of tafoxiparin, the patient suffering could be reduced and save valuable health care resources.

In 2021, the results of a placebo-controlled phase 2b study were presented which showed that tafoxiparin has a significant positive effect on cervical ripening in first-time mothers who receive treatment to initiate labor. The study included 170 first-time mothers with immature cervixes, which are treated to ripen the cervix and thereby facilitate the onset of labor. Patients were treated with either a subcutaneous injection of tafoxiparin or a placebo once daily for up to one week prior to scheduled initiation. The primary objective of the study was to document the effect of tafoxiparin on cervical ripening measured as the degree of ripening according to an internationally established scale, the Bishop score.

The study results showed that tafoxiparin affected the ripening of the cervix compared to placebo, with a difference that was statistically significant ($p < 0.009$). Based on the positive results, Dilafor extended the phase 2b study, to document the effect of tafoxiparin also in two lower doses than what has been studied thus far. The extension study included 164 women, is fully recruited, and positive results regarding dose response were presented in mid-February 2023.

The market

Up to 30% of all pregnant women require labor induction. The current standard treatment includes administration of prostaglandins and oxytocin, but in over 50 per cent of cases, the induction fails, leading to protracted labor, emergency caesarean sections, or other maternal and foetal complications. Market analyses show that a drug with a good effect on the ripening of the cervix has the potential to reach annual sales over USD 1 billion in the US market alone.

Recent progress

- In December 2022, recruitment was completed for the extension of the phase 2b study of the drug candidate tafoxiparin for induction of childbirth.
- Positive results from the extension of the phase 2b study with lower doses were presented in February 2023.

Expected milestones

- Start of Phase 3 study with tafoxiparin for labor induction.

Umecrine cognition

Project (First-in-class)
Golexanolone (GR3027)

Primary indications
Hepatic encephalopathy
Primary biliary cholangitis

Development phase
Phase 2b

Holding in company*
Karolinska Development 67%

Other investors
Norrlandsfonden
Quickly KNox Förvaring AB
PartnerInvest

Origin
Umeå University

More information
umecrinecognition.com

** Fully-diluted ownership based on current investment plans.*

Deal values for similar projects

- USD 397 million Aerial Biopharma (licensor) & Jazz Pharmaceuticals (licensee) 2014
- USD 201 million Vernalis (licensor) & Corvus Pharmaceuticals (licensee) 2015

Umecrine Cognition AB

Developing a new approach to alleviate cognitive impairment

Umecrine Cognition (Solna, Sweden) is developing golexanolone (GR3207), a candidate drug in a new class of pharmaceuticals that affect the GABA system, where GABA stands for gamma-aminobutyric acid, the chief inhibitory neurotransmitter in the central nervous system. The GABA system is suspected of being over-activated in liver failure, causing very serious clinical symptoms. The over-activation is also thought to lay behind certain cognitive impairments and sleep disturbances. GABAA-receptor modulating steroid antagonists, such as golexanolone, counter the increased activation of the GABA system and has been shown to restore different types of neurological impairments in experimental models. The candidate drug enters the brain and works by reversing the inhibitory effects of the neurosteroid allopregnanolone.

Umecrine Cognition has conducted a clinical phase 2a study of golexanolone in patients with hepatic encephalopathy (HE) – a serious neuropsychiatric and neurocognitive condition that occurs in conjunction with acute and chronic hepatic damage with underlying cirrhosis. The results showed that the candidate drug was well-tolerated, that the safety profile was good, and that the pharmacokinetic profile was favorable. One of the effect parameters – a well-established and sensitive form of EEG study – demonstrates that the candidate drug has a significant effect on brain signaling, with a correlated positive effect on extreme daytime fatigue. Based on these study results, the company has established a plan for the further development of the candidate drug in HE and primary biliary cirrhosis (PBC).

The market

PBC (primary biliary cholangitis) is a rare autoimmune liver disease with about 190,000 patients globally where 9 out of 10 sufferers are women. Common symptoms include fatigue, cognitive impairment, itching and, in more advanced cases, even jaundice. The global PBC treatment market is estimated at USD 584 million by 2021 and is expected to grow to USD 3 billion by 2027. HE is a serious disease with a high unmet medical need, affecting up to 1 percent of the population in the US and EU. Over a five-year period, developed HE results in a mortality rate of 22–35 percent.

Recent progress

- In September 2022, SEK 41 million was secured for the phase 2b study of golexanolone in PBC.
- In September, Umecrine Cognition presented positive preclinical data supporting the potential of golexanolone to attenuate severe chronic symptoms in patients suffering from PBC.
- In January 2023, data were presented showing the efficacy of golexanolone in a preclinical model of Parkinson´s disease.
- In January 2023, Umecrine Cognition was granted orphan drug designation by the US Food and Drug Administration for the drug candidate golexanolone within the indication PBC.

Going forward

- Topline data from the Phase 2 study of golexanolone in patients with PBC are expected to be available in 2024.

Project (First-in-class)
SVF-001

Primary indication
Hepatitis B and D
SARS-CoV-2
and other Coronaviruses

Development phase
Preclinical

Holding in company*
Karolinska Development 35%

Origin
Karolinska Institutet

More information
svenskavaccinfabriken.se

**Fully-diluted ownership based on current investment plans*

Deal values for similar projects

- USD 546 million Affinivax raises Series B and C financing 2020
- USD 1.4 billion MYR Gmbh (acquired) & Gilead Sciences Inc (buyer) 2020

SVF Vaccines AB

New technology for the treatment of viral diseases

SVF Vaccines (formerly Svenska Vaccinfabriken Produktion, Solna, Sweden) develops therapeutic proteins and DNA vaccines against, among other things, hepatitis B and D, as well as vaccines to prevent infections by covid-19 and potential future Coronaviruses. Therapeutic vaccines, unlike preventative vaccines, have the potential to cure already infected patients.

Despite the availability of preventative vaccines and antiviral treatments, over 250 million people live with a chronic hepatitis B infection. One million chronic carriers die each year due to complications caused by the virus, such as liver cirrhosis and liver cancer. The closely related hepatitis D virus infects 15-25 million hepatitis B carriers and exacerbates the progression of the disease.

SVF Vaccines uses a proprietary immunotherapy to produce a specific form of antibodies that blocks the ability of the hepatitis virus to invade human cells. The company has generated promising efficacy data in a preclinical animal model and is now continuing its preclinical development with the goal of enabling a phase 1 study to be initiated in 2024.

Although Coronavirus infections are usually mild, some virus types can lead to life-threatening conditions. To respond to and to prevent severe infections, SVF has also developed a platform that is expected to make it possible to create vaccines against both current and new forms of Coronaviruses for which a phase 1 study is expected to start in 2023. The company has been granted patents for chimeric antigens encompassing both genes and peptides that elicit an immune response against chronic hepatitis B and D infections and has filed a patent application linked to a potential covid-19 vaccine.

The market

SVF Vaccines is currently focusing its innovative vaccine platform on the market for therapeutic vaccines for hepatitis B and D, and preventative vaccines for respiratory viral diseases, such as Covid-19. The 2017 KuicK research report, "Global Hepatitis Drug Market & Clinical Trials Insight 2023" estimated the value of the annual global market for hepatitis B at between USD 4-5 billion, growing to USD 5-6 billion by 2023. The annual global market for hepatitis D, by contrast, is estimated at around USD 1 billion. Investors' interest in early vaccine companies and platforms similar to SVF Vaccines' has increased markedly in recent years. This is thought to be due to an increased awareness of the potential for the commercialization of vaccines based on next generation technology, such as RNA vaccines and DNA vaccines. Interest in therapies to treat hepatitis B and D has further intensified – two areas in which the unmet medical need is still significant.

Recent progress

- Richard Bethell is appointed new CEO in January 2022.
- The company presents preclinical study data indicating that the candidate therapeutic vaccine SVF-001 has the potential to elicit an immune response in a preclinical disease model of chronic hepatitis B at the EASL International Liver Congress™ in June 2022.
- The company changed its name to SVF Vaccines in January 2023.

Expected milestones

- The work to prepare the vaccine product against HBV / HDV for further development towards studies in humans is expected to be completed during H1 2023.
- Phase 1 study with COVID vaccine expected to be initiated in early 2023 (as part of a clinical academic collaborative project).
- Phase 1 studies of hepatitis B and D vaccines are expected to be initiated in 2024.

AnaCardio

Project (First-in-class)
AC01

Primary indication
Heart failure

Development phase
Phase 2a

Holding in company'
Karolinska Development 21%

Other investors
Flerie Invest
LLD Nybohov Invest
Industrifonden
3B Health Ventures

Origin
Karolinska Institutet
Karolinska University Hospital

More information
anacardio.com

**Fully-diluted ownership based on current investment plans*

Deal values for similar projects

- USD 2.1 billion Cardioxyl Pharmaceuticals (licensor) & Bristol-Myers Squibb (licensee), 2015
- USD 620 million Corthera (licensor) & Novartis (licensee), 2012

AnaCardio AB

Protects heart tissue in heart failure

AnaCardio (Stockholm, Sweden) is developing a new form of drug concept that protects cardiac tissue in conjunction with heart failure. Heart failure occurs when the heart's ability to pump sufficient blood to meet the body's needs has deteriorated. The underlying condition often involves a weakening of the heart's musculature, resulting in an inability to pump the blood out of the heart's chambers. The condition arises as a sequela of high blood pressure or vasoconstriction and the chronic phase is characterized by diffuse symptoms, such as tiredness or breathlessness, which leads to the illness often being diagnosed at a late stage. Acute heart failure results in an individual's health status becoming critical, necessitating hospitalization, but a major issue with existing pharmaceuticals is that they are not designed for long-term treatment.

AnaCardio's clinical candidate drug is being developed to restore the heart's normal muscular function and blood circulation with ground-breaking and safer technique. The Company's goal is to develop an oral drug that in contrast to existing treatments can affect the underlying cause of disease. The drug candidate is based on research by Professor Lars Lund at Karolinska Institutet.

In September 2022, a series A financing round of SEK 150 million was closed in which Karolinska Development participated together with a group of reputable investors to finance a clinical phase 1b/2a study of the drug candidate AC01 in patients with heart failure.

The market

It is estimated that more than 6 million individuals in the United States and nearly 100 million globally suffer from heart failure. The risk of developing a cardiovascular disease increases with age, and 10-20 per cent of the elderly population is now estimated to suffer from chronic heart failure, which is now the most common reason for hospitalization amongst the elderly. Heart failure not only causes considerable individual suffering, but it also has significant economic consequences for society in the form of both direct costs from in-patient care and indirect costs such as productivity losses. The increased medical need is reflected in the sales value of heart failure treatments, which is expected to increase from USD 6.8 billion by 2021 to USD 18.7 billion by 2028 in the world's seven largest pharmaceutical markets.

Recent progress

- During February 2022, the company raised SEK 33 million through a convertible loan.
- In September 2022, a series A financing round of SEK 150 million was closed in which Karolinska Development participated together with a group of reputable investors, including Flerie Invest, Industrifonden and 3B Health Ventures. The proceeds from the investment round will finance a clinical phase 1b/2a study of the drug candidate AC01 in patients with heart failure.
- In November 2022, AnaCardio received regulatory approval to initiate the Phase 1b/2a study in the EU and the UK.

Expected milestones

- Start of phase 1b/2a study of the drug candidate AC01.

PHARMNOVO

Project (First-in-class)
PN6047

Primary indication
Allodynia/ Hyperalgesia

Development phase
Phase 1

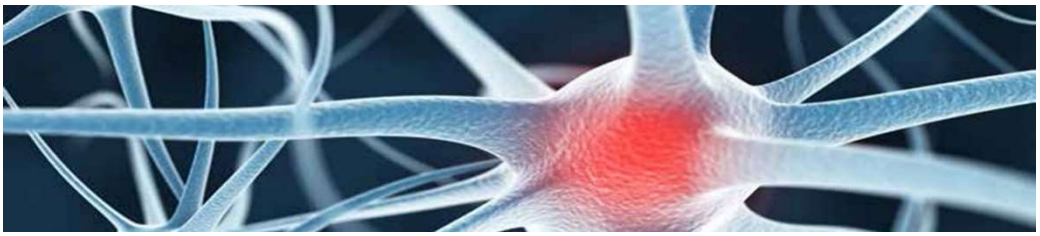
Holding in company'
Karolinska Development 13%

Origin
Start-up

More information
pharmnovo.com

**Fully-diluted ownership based on current investment plans*

PharmNovo AB



Innovative drug project for the treatment of nerve pain

PharmNovo (Lund, Sweden) is developing innovative drugs for the treatment of nerve pain (neuropathic pain). Neuropathic pain is one of the most prevalent types of chronic pain and affects up to 10 percent of the population. Common causes include nerve damage from type 2 diabetes, shingles and can also arise from trauma (including surgery), cancer and cancer treatments. PharmNovo's lead candite, PN6047, focuses on allodynia and hyperalgesia, two common forms of nerve pain, affecting 15-20 per cent of neuropathic pain patients. Allodynia is pain due to a stimulus that does not usually provoke pain, while hyperalgesia is increased pain from a stimulus that usually provokes pain. These types of pain have highly detrimental effects on the quality of life; it impairs everyday activities and social functioning and has harmful physical effects (e.g., due to lack of mobility, energy, appetite, and sleep deprivation etc.). Current treatment options are deemed ineffective and are also associated with significant side-effects; particularly cardiovascular risks, a higher risk of suicide and drug abuse potential with gabapentinoids or conventional opioids.

PharmNovo's novel drug candidate, which is based on a drug development project from AstraZeneca, targets a different receptor than conventional opiate drugs do; the delta opiod receptor, and thereby decreases the chronical pain without some of the side-effects associated with the current marketed opioids (constipation, physical dependence and, potentially, fatal respiratory depression). PN6047 has been tested in various mechanistic in vitro models and in animal models for neuropathic pain states, as well as for short term tolerance and dependence. In addition, initial safety pharmacology, pharmacokinetics, and regulatory toxicology studies have been performed.

Deal values for similar projects

- USD 940 million ACADIA Pharmaceuticals (acquirer) & CerSci Therapeutics (acquired), 2020
- USD 312 million Novartis (acquirer) & Spinifex Pharmaceuticals (acquired), 2015

The market

The need for improved treatments for nerve pain is enormous. Around 10 per cent of the world's population currently suffers from conditions characterized by this form of pain, leading to a severely reduced quality of life for the individual and substantial costs for society – estimated at nearly EUR 440 billion annually in Europe alone. The estimated global market value for nerve pain drugs is nearly USD 6 billion and the market for allodynia alone is around USD 1.25 billion and is expected to continue to grow driven by an aging population and increased cancer survival.

Recent progress

- In June 2022, the company raised SEK 67 million in a new share issue including investments from Karolinska Development. The new capital will be used to finance drug substance manufacture, the completion of a clinical phase 1 trial of the drug candidate PN6047, and continue the company's development.
- An additional rights issue of SEK 6 million was completed in August 2022.
- Phase 1 study with PN6047 initiated in August 2022.

Expected milestones

- Phase 1 study with PN6047 is ongoing and a first read out is planned in Q2 2023.

Henlez ApS

Project (First-in-class)
HEN-001

Primary indication
Hidradenitis suppurativa

Development phase
Preclinical

Holding in company*
Karolinska Development 14%

Other investors
Eir Ventures

Origin
Start-up

More information
henlez.com

** Fully-diluted ownership based on current investment plans.*

Develops topical treatment against hidradenitis suppurativa

Henlez (Copenhagen, Denmark) is a privately owned company developing a topical enzyme-based treatment of hidradenitis suppurativa. The company was founded 2019 by former Novozymes A/S scientist and current CEO Jeppe Mouritsen.

Henlez's pre-clinical lead development program, HEN-001, is an enzyme-based, topical application directed towards hidradenitis suppurativa – a highly stigmatizing and chronic inflammatory condition characterized by severe pain, malodorous drainage and permanent scarring of the armpits and groin. Despite an increasing number of drug trials, the available treatment options are still insufficient. Patients and key opinion leaders unanimously identify a large unmet need for novel treatments, a problem Henlez is poised to meet.

In October 2022, the company raised EUR 1 million in seed financing from Nordic venture capital firms Eir Ventures and Karolinska Development. The proceeds will cover the formulation development of topical HEN-001 to facilitate a forthcoming clinical evaluation of the product as well as an expansion of the patent portfolio.

Deal values for similar projects

- USD 750 million Janssen (buyer) & XBiotech (seller), 2019
- USD 760 million LEO Pharma (buyer) & PellePharm (seller), 2018

The market

An estimated 1% of the world's population is affected by hidradenitis suppurativa. The global market for therapeutic treatments of the disease is projected to reach USD 1.8 billion by 2028. Available medical treatment options for the condition mainly comprise repurposed, palliative drugs for systemic administration that are limited in both numbers, safety, and effect.

Recent progress

- In October 2022, Karolinska Development's seed financing of Henlez was made in syndication with the Nordic venture capital firm Eir Ventures, where both parties have contributed EUR 0.5 million each.

OSSDSIGN®

Project
OSSDSIGN® Cranial PSI and OSSDSIGN® Catalyst

Primary indication
Cranial implants
Bone grafts

Development phase
Marketed

Holding in company*
Karolinska Development 10%**

Other investors
SEB Venture Capital
Fouriertransform

Origin
Karolinska University Hospital,Uppsala University

More information
ossdsign.com

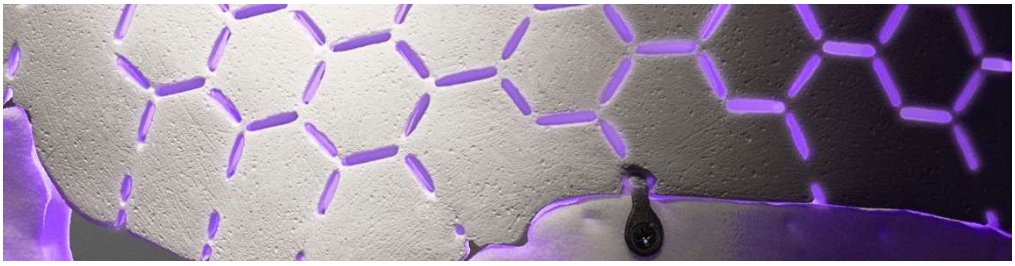
** Fully-diluted ownership based on current investment plans*

*** Includes indirect holdings through KCIF Co-Investment Fund*

Deal values for similar projects

- USD 330 million Baxter International (buyer) & ApaTech (seller) 2010
- USD 360 million Royal DSM (buyer) & Kensey Nash (seller) 2012

OssDsign AB



Creating the next generation bone replacement products and skull implants

OssDsign (Uppsala, Sweden) is an innovative company that designs and manufactures implants and material technology for bone regeneration. The Company is focused on two particularly challenging areas where treatment results have so far been insufficient: cranial and spinal surgeries.

OssDsign Cranial PSI is an implant used for patients who have lost a large part of the cranium. The implant is constructed from 3D printed medical-grade titanium covered by a regenerative calcium phosphate composition. Long term follow-up data from nearly 2,000 patients with OssDsign Cranial PSI implants show an exceptional performance. Many cranial implant technologies are associated with high risks of costly complications that involve great suffering for patients and significant costs to society. Multiple studies report infection rates above 10 per cent, leading to the removal of many implants. In comparison, the observed rate of explanations due to infections in patients who received OssDsign Cranial PSI was only 1.4 per cent at a median follow-up time of 21 months. OssDsign Cranial PSI has regulatory approvals in Europe, USA and Japan.

Approximately 20 per cent of surgeries for treating lower back pain are unsuccessful due to the lack of proper fusion between the implant and the spine. When surgeons perform the procedure, they use a combination of metal components to fixate the vertebrae and bone replacement material to stimulate bone growth. OssDsign Catalyst is an innovative synthetic bone graft composed of a proprietary nanocrystalline structure of calcium phosphate. Similar to the body's own bone mineral architecture, OssDsign Catalyst provides a favorable bone biology environment for rapid and reliable bone formation. OssDsign Catalyst is a high margin and scalable product with a large potential in the market for standard procedures, enabling extensive growth. OssDsign Catalyst received FDA clearance in 2020 and was launched in the U.S. in August 2021.

The market

The global market for cranial implants is estimated to USD 2.5 billion with an expected CAGR of 7 per cent between 2021–2025, whereof the addressable market for OssDsign's implant products is estimated to USD 350 million. The U.S. market for synthetic bone grafts in spinal surgeries is valued at USD 1.8 billion.

Recent progress

- OssDsign includes first patient in the prospective multi-center registry PROPEL for spinal fusion in the US in April 2022.
- In April 2022, OssDsign's clinical study TOP FUSION is fully enrolled and patient follow-up will continue over 24 months.
- In the same month, results from a long-term follow-up of OssDsign Catalyst were presented, showing a total absence of product-related complications.
- In November 2022, a directed share issue of SEK 65.6 million was carried out before deduction of transaction costs. The issue was subscribed for by Adrigo Small & Midcap and two of the company's largest owners, Karolinska Development and Lancelot Asset Management.
- In January 2023, a first patient report from the TOP FUSION clinical study will be published, showing a complete spinal fusion six months after surgery with OssDsign Catalyst.

Promimic
THINNER. FASTER. STRONGER.

Project
HA*nano* Surface

Primary indication
Implant surface coatings

Development phase
Marketed

Holding in company*
Karolinska Development 2%
KDev Investments 14%

Other investors
K-Svets Ventures
ALMI Invest
Chalmers Ventures

Origin
Chalmers University of Technology

More information
promimic.com

**Fully-diluted ownership based on current investment plans*

Deal values for similar projects

- USD 95 million Nobel Biocare (buyer) & AlphaBioTec (seller) 2008
- USD 120 million MAKO surgical (buyer) & Pipeline Biomedical (seller) 2013

Promimic AB

Coatings to enhance the properties of medical implants

Promimic (Gothenburg, Sweden) is a biomaterials company that develops and markets HAnano Surface, an innovative coating for medical implants that strengthens its anchorage in bone tissue. HAnano Surface is a nanometre-thin coating that helps to stimulate the growth of bone cells and thereby improves bone healing. The coating is unique because it can be applied to any implant geometry and material, including porous materials and 3D structures. The technology on which HAnano is based is FDA-approved, which means that a new implant coated with HAnano Surface can receive marketing approval through the 510(k) route and reach a new market quickly. In the past two years, Promimic has gone from five to 26 different implants that are approved for clinical use with the company's coating technology.

Promimic has an established sales operation in the USA and a series of development and commercial partnerships, including one with Sistema de Implante Nacional (S.I.N), a leading provider of dental implants in Brazil, which is commercializing dental implants coated with HAnano Surface. Promimic has gradually strengthened its position in the orthopedic market by entering collaboration with Onkos Surgical and INNOVASIS Inc. The collaboration with Onkos Surgical includes the development and commercialization of products treated with HAnano Surface technology for hip cancer surgery. Innovasis Inc. manufactures and sells 3D-printed spinal implants treated with HAnano Surface in order to improve osseointegration and stimulate new bone formation and bone growth on the implant surface.

The market

Promimic focuses on two main segments, namely the markets for orthopedic and dental implants. Together, these segments represent a global market opportunity for Promimic worth up to USD 600-800 million in 2025. Within these segments, the company's target group is medium to large sized implant companies and the main market is the United States.

Recent progress

- In April 2022, Promimic successfully listed the company's share on Nasdaq First North Growth Market in a fully subscribed IPO offering.
- New preclinical results showing that the company’s HAnano Surface coating technology reduces the risk of adhesion by common pathogenic bacteria by up to 60% in June 2022.
- Promimic and Danco Medical form joint venture to better serve the US market in July 2022.

Expected milestones

- In 2023, the company is expected to pursue approximately 18 development projects and further product launches and license agreements will be finalized and announced.

Financial Development

The following financial reporting is divided into one financial reporting for The Parent Company and one for The Investment Entity. The Parent Company and The Investment Entity are the same legal entity, but the reporting is divided to meet legal reporting requirements.

The Parent Company is reporting in accordance with the guidelines under the Swedish Annual Accounting Act and Swedish Financial Accounting Standards Council, RFR 2. The Investment Entity is required to meet the reporting requirements of listed companies and thus in accordance with IFRS adopted by the EU and the Swedish Annual Accounts Act

Amounts with brackets refer to the corresponding period previous year unless otherwise stated.

Financial development in summary for the Investment Entity

SEKm	2022 Oct-Dec	2021 Oct-Dec	2022 Full-year	2021 Full-year
Condensed income statement				
Change in fair value of shares in portfolio companies	15.3	-16.8	-76.1	223.2
Net profit/loss	10.0	-19.5	-88.1	170.8
Balance sheet information				
Cash and cash equivalents	189.8	92.4	189.8	92.4
Net asset value (Note 1)	1,249.1	978.0	1,249.1	978.0
Net debt (Note 1)	-189.8	32.2	-189.8	32.2
Share information				
Earnings per share, weighted average before dilution (SEK)	0.0	-0.1	-0.3	1.0
Earnings per share, weighted average after dilution (SEK)	0.0	-0.1	-0.3	1.0
Net asset value per share (SEK) (Note 1)	4.6	5.6	4.6	5.6
Equity per share (SEK) (Note 1)	4.6	5.5	4.6	5.5
Share price, last trading day in the reporting period (SEK)	1.7	5.3	1.7	5.3
Portfolio information				
Investments in portfolio companies	15.6	0.0	110.3	69.2
Of which investments not affecting cash flow	0.4	0.0	1.1	16.4
Portfolio companies at fair value through profit or loss	984.0	950.2	984.0	950.2

Financial Development for the Investment Entity in 2022

Investments *(comparable numbers 2021)*

Investments in the portfolio in the fourth quarter 2022 by external investors and Karolinska Development amounted to SEK 122.5 (0.0) million, whereof 88% (0%) by external investors.

Karolinska Development invested during the fourth quarter SEK 15.6 (0.0) million, of which SEK 15.2 (0.0) million was cash investments. Investments were made in OssDsign SEK 7.2 million, Henlez SEK 5.5 million and in SVF Vaccines (formerly Svenska Vaccinfabriken Produktion) with SEK 2.5 million. Non-cash investments (accrued interest on loans) amounted to SEK 0.4 (0.0) million.

Investments by external investors in the portfolio companies during the fourth quarter amounted to SEK 106.9 (0.0) million and were made in OssDsign, Henlez and Biosergen.

During the year, Karolinska Development and external investors have made investments in the portfolio companies as follows:

SEKm	Karolinska Development	External Investors	Total Invested Q1-Q4 2022
AnaCardio[1]	26.7	108.0	134.7
PharmNovo	20.0	6.7	26.7
Umecrine Cognition	15.1	26.0	26.0
Dilafor	12.9	19.6	32.5
Modus Therapeutics	11.8	0.0	11.8
OssDsign	7.2	58.4	65.6
SVF Vaccines	6.1	0.0	6.1
Henlez	5.5	5.5	11.0
Promimic	5.0	87.4	92.4
Biosergen	-	43.0	43.0
Total	**110.3**	**354.6**	**464.9**

[1]This years total investments in AnaCardio consist of convertible loan from January 2022 of SEK 34.7 million and the first tranche of SEK 100 million (of total SEK 150 million) in a series-A finance from September 2022.

Portfolio Fair Value

Fair Value of the portfolio companies owned directly by Karolinska Development had a net increase by SEK 34.4 million during the fourth quarter 2022. The main reason was the investments in OssDsign, Henlez and SVF Vaccines (formerly Svenska Vaccinfabriken Produktion) but also the upturn in share price in the listed holdings OssDsign and Modus Therapeutics.

Fair Value of the portfolio companies owned indirectly via KDev Investments decreased by SEK 5.3 million during the fourth quarter 2022.The main reasons for the decrease in Fair value of the portfolio companies was the downturn in share price in the listed holdings Aprea Therapeutics and Biosergen.

Total Fair Value from portfolio companies owned directly by Karolinska Development and indirectly via KDev Investments increased by SEK 29.1 million in the fourth quarter 2022.

As a consequence of the decrease in Fair Value of the part of the portfolio owned via KDev Investments, the potential distribution to Rosetta Capital decreased by SEK 1.9 million, resulting in Net Portfolio Fair Value increasing by SEK 31.0 million in the fourth quarter 2022.

SEKm	31 Dec 2022	30 Sep 2022	Q4 2022 vs Q3 2022
Karolinska Development Portfolio Fair Value (unlisted companies)	704.4	696.1	8.3
Karolinska Development Portfolio Fair Value (listed companies)	75.5	49.4	26.1
KDev Investments Portfolio Fair Value	532.5	537.8	-5.3
Total Portfolio Fair Value	**1,312.5**	**1,283.4**	**29.1**
Potential distribution to Rosetta Capital of fair value of KDev Investments	-328.5	-330.4	1.9
Net Portfolio Fair Value (after potential distribution to Rosetta Capital)	**984.0**	**953.0**	**31.0**

Profit development 2022 (comparable numbers 2021)

During the fourth quarter 2022, Karolinska Development's revenue amounted to SEK 0.6 (0.5) million and consists primarily of services provided to portfolio companies. For the full-year 2022, the revenue amounted to SEK 2.3 (2.2) million.

Change in fair value of shares in portfolio companies of in total SEK 15.3 (-16.8) million includes the difference between the change in Net Portfolio Fair Value during the fourth quarter 2022 with SEK 31.0 million, the investment in portfolio company of SEK 15.6 million. Change in fair value of other financial assets and liabilities amounted to SEK 1.0 (7.0) million and are the consequence of changes in valuation of earn-out deals. For the full-year 2022, the change in fair value of shares in portfolio companies amounted to SEK -76.1 (223.2) million and the change in fair value of other financial assets amounted to SEK 20.4 (-33.9) million.

During the fourth quarter 2022 other expenses amounted to SEK 1.9 (1.3) million and personnel costs amounted to SEK 6.0 (6.7) million. For the full-year 2022 other expenses amounted to SEK 6.8 (6.9) million and personnel cost amounted to 26.5 (23.2) million

The operating profit/loss in the fourth quarter 2022 amounted to SEK 8.8 million compared to SEK -17.5 million in the fourth quarter 2021. The operating profit/loss for the full-year 2022 amounted to SEK -87.4 (160.7) million.

The financial net during the fourth quarter 2022 amounted to SEK 1.2 million compared to SEK -2.0 million in the fourth quarter of 2021. For the full-year 2022 the financial net amounted to SEK -0.7 (10.1) million.

The Investment Entity's Net profit/loss amounted to SEK 10.0 (-19.5) million in the fourth quarter 2022. Net profit/loss for the full-year 2022 amounted to SEK -88.1 (170.8) million.

Financial position

The Investment Entity's equity to total assets ratio amounted to 99% on 31 December 2022, compared to 88% on 31 December 2021.

The investment company's equity on 31 December 2022, amounted to SEK 1,241.4 million, compared to SEK 1,231.4 million on 30 September 2022. The increase is a consequence of the profit/loss for the period of SEK 10.0 million.

The company has no interest-bearing liabilities as of 31 December 2022 (SEK 124.6 million as of 31 December 2021).

After paying operational costs and investments for the fourth quarter 2022, cash and cash equivalents (including short term investments) amounted to SEK 189.8 million on 31 December 2022 compared to SEK 92.4 million on 31 December 2021. Net debt (negative net debt/ net cash) amounted to SEK -189.8 million on 31 December 2022 compared to the net debt of SEK 92.4 million on 31 December 2021.

The company is going concern. The company's ability to continue operations (going concern) is stable. The report is prepared based on the assumption of continued operation.

Financial Development – Parent Company

The Parent Company refers to Karolinska Development AB (comparable numbers 2021).

During the fourth quarter 2022, the Parent Company's Net profit/loss amounted to SEK 10.0 (-19.5) million. Net profit/loss for the full-year 2022 amounted to SEK -88.1 (170.8) million.

The positive result for the fourth quarter of 2022 led to a increase in equity of SEK 10.0 million from SEK 1,231.5 million as of 30 September 2022 to SEK 1,241.5 million 31 December 2022.

The Share

The share and share capital

Trade in the Karolinska Development share takes place on Nasdaq Stockholm under the ticker symbol "KDEV". The last price paid for the listed B share on 31 December 2022 was SEK 1.73, and the market capitalization amounted to SEK 467 million.

The share capital of Karolinska Development on 31 December 2022 amounted to SEK 2.7 million divided into 2,555,261 A shares, each with ten votes (25,552,610 votes) and 267,522,333 B shares, each with one vote (267,522,333 votes). The total number of shares and votes in Karolinska Development on 31 December 2022 amounted to 270,077,594 shares and 293,074,943 votes.

Ownership

On 31 December 2022, Karolinska Development had 17,166 shareholders.

Shareholder	A-Shares	B-Shares	Cap %	Vote %
invoX Pharma Ltd	0	128,736,384	47.67%	43.93%
Worldwide International Investments Ltd	0	28,007,077	10.37%	9.56%
Swedbank Robur Microcap fond	0	8,750,000	3.24%	2.99%
Stift För Främjande & Utveckling	2,555,261	1,755,818	1.60%	9.32%
Nyenburgh Hohlding B.V.	0	2,580,000	0.96%	0.88%
Coastal Investment Management LLC	0	2,470,541	0.91%	0.57%
Östersjöstiftelsen	0	2,203,746	0.82%	0.84%
SEB Investment Management	0	1,662,069	0.62%	0.75%
Adis Holding	0	1,200,000	0.44%	0.41%
Handelsbanken Fonder	0	1,189,769	0.44%	0.41%
Sum Top 10 Shareholders	2,555,261	178,555,404	67.06%	69.64%
Sum Other Shareholders	0	88,966,929	32.94%	30.36%
Sum All Shareholders	**2,555,261**	**267,522,333**	**100.00%**	**100.00%**

Information on Risks and Uncertainties

Investment Entity and Parent Company

Financial risks

Russia's invasion of Ukraine and the coronavirus's global spread affects the economy and society as a whole, including Karolinska Development and its portfolio companies. The general downturn in the stock market in 2022 and the increase in interest rates have shifted the financial market's focus from growth companies to companies with positive operating cash flows, which has led to lower valuations in many previously highly valued growth companies. This may affect Karolinska Development and its opportunities to not only finance its portfolio companies, but also to divest them at a suitable time for Karolinska Development.

The value of listed companies can decline, delays in clinical trial programs may occur and the opportunities for refinancing can be hampered. The Board monitors the evolvement of the crises closely and Karolinska Development is working intensively to minimize the impact on the value of our investments and continues with different financing alternatives to secure the long-term capital requirement and thereby increase the degree of strategic and operational headroom for the future.

After the initial payment from the sale of Forendo Pharma which was received in December 2021 and the rights issue carried out in February 2022 the company's long-term financial situation has been strengthened.

For a detailed description of other risks and uncertainties, see the Annual report 2021.

Signing of the report

Solna, 17 February 2023

Viktor Drvota
CEO

Dates for Publication of Financial Information

Annual Report 2022	24 March 2023
Interim Report January – March 2023	28 April 2023
Annual meeting 2023	16 May 2023
Interim Report January – June 2023	25 August 2023
Interim Report January – September 2023	17 November 2023

Karolinska Development is required by law to publish the information in this interim report. The information was published on 17 February 2023.

This interim report, together with additional information, is available on Karolinska Development's website: www.karolinskadevelopment.com.

Note: This report is a translation of the Swedish interim report. In case of any discrepancies, the official Swedish version shall prevail.

Financial Statements

Condensed income statement for the Investment Entity

SEK 000	Note	2022 Oct-Dec	2021 Oct-Dec	2022 Full-year	2021 Full-year
Revenue		562	469	2,300	2,170
Change in fair value of shares in portfolio companies	2,3	15,314	-16,770	-76,083	223,203
Change in fair value of other financial assets and liabilities		1,089	6,954	20,435	-33,891
Other expenses		-1,949	-1,291	-6,798	-6,887
Personnel costs		-6,026	-6,686	-26,585	-23,205
Depreciation of right-of-use assets		-173	-173	-690	-690
Operating profit/loss		**8,817**	**-17,497**	**-87,421**	**160,700**
Financial net		1,205	-1,997	-701	10,119
Profit/loss before tax		**10,022**	**-19,494**	**-88,122**	**170,819**
Taxes		-	-	-	-
NET PROFIT/LOSS FOR THE PERIOD		**10,022**	**-19,494**	**-88,122**	**170,819**

Condensed statement of comprehensive income for the Investment Entity

SEK 000	Note	2022 Oct-Dec	2021 Oct-Dec	2022 Full-year	2021 Full-year
Net profit/loss for the period		10,022	-19,494	-88,122	170,819
Total comprehensive income/loss for the period		**10,022**	**-19,494**	**-88,122**	**170,819**

Earnings per share for the Investment Entity

SEK	Note	2022 Oct-Dec	2021 Oct-Dec	2022 Full-year	2021 Full-year
Earnings per share, weighted average before dilution		0.04	-0.11	-0.34	0.97
Number of shares, weighted average before dilution		269,833,309	175,421,124	257,417,460	175,421,124
Earnings per share, weighted average after dilution		0.04	-0.11	-0.34	0.97
Number of shares, weighted average after dilution		269,833,309	175,421,124	257,417,460	175,421,124

Condensed balance sheet for the Investment Entity

SEK 000	Note	31 Dec 2022	31 Dec 2021
ASSETS			
Tangible assets			
Right-of-use assets		690	690
Financial assets			
Shares in portfolio companies at fair value through profit or loss	2,3	983,995	950,170
Other financial assets	4	59,537	61,799
Total non-current assets		**1,044,222**	**1,012,659**
Current assets			
Receivables from portfolio companies		211	505
Other financial assets		15,970	0
Other current receivables		673	768
Prepaid expenses and accrued income		750	2,940
Short-term investments, at fair value through profit or loss		58,742	50,005
Cash and cash equivalents		131,078	42,398
Total current assets		**207,424**	**96,616**
TOTAL ASSETS		**1,251,646**	**1,109,275**
EQUITY AND LIABILITIES			
Total equity		**1,241,438**	**971,086**
Current liabilities			
Current interest liabilities to related parties	5	-	124,603
Other financial liabilities		191	1,756
Accounts payable		439	1,674
Liability to make lease payment		753	732
Other current liabilities		654	2,156
Accrued expenses and prepaid income		8,171	7,268
Total current liabilities		**10,208**	**138,189**
Total liabilities		**10,208**	**138,189**
TOTAL EQUITY AND LIABILITIES		**1,251,646**	**1,109,275**

Condensed statement of changes in the Investment Entity's equity

SEK 000	Not	2022-12-31	2021-12-31
Opening balance, equity		**971,086**	**800,267**
Share capital		2,701	1,757
Share premium		2,735,903	2,378,373
Retained earnings		-1,497,166	-1,409,044
Closing balance, equity		**1,241,438**	**971,086**

Condensed statement of cash flows for the Investment Entity

SEK 000	Note	2022 Full-year	2021 Jan-Dec
Operating activities			
Operating profit/loss		-87,421	160,700
Adjustments for items not affecting cash flow			
Depreciation		690	690
Change in fair value		55,648	-189,312
Other items		-206	0
Cash flow from operating activities before changes in working capital and operating investments		**-31,289**	**-27,922**
Cash flow from changes in working capital			
Increase (-)/Decrease (+) in operating receivables		416	-1,461
Increase (+)/Decrease (-) in operating liabilities		-1,661	46,084
Cash flow from operating activities		**-32,534**	**16,701**
Investment activities			
Part payment from earn-out deal		5,358	-3,121
Proceeds from sale of shares in portfolio companies		-	56,427
Acquisitions of shares in portfolio companies		-109,166	-52,759
Acquisitions of short-term investments		-10,000	-50,005
Cash flow from investment activities		**-113,808**	**-49,458**
Financing activities			
Cash from rights issue		254,911	-
Prospectus costs		-19,175	-
Amortization of lease liabilities		-714	-714
Cash flow from financing activities		**235,022**	**-714**
Cash flow for the period		**88,680**	**-33,471**
Cash and cash equivalents at the beginning of the year		42,398	75,869
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD		**131,078**	**42,398**

Condensed income statement for the Parent Company

SEK 000	Note	2022 Oct-Dec	2021 Oct-Dec	2022 Full-year	2021 Full-year
Revenue		562	469	2,300	2,170
Change in fair value of shares in portfolio companies	2.3	15,314	-16,770	-76,083	223,203
Change in fair value of other financial assets and liabilities		1,089	6,954	20,435	-33,891
Other expenses		-2,129	-1,470	-7,513	-7,601
Personnel costs		-6,026	-6,686	-26,585	-23,205
Operating profit/loss		**8,810**	**-17,503**	**-87,446**	**160,676**
Financial net		1,215	-1,988	-655	10,164
Profit/loss before tax		**10,025**	**-19,491**	**-88,101**	**170,840**
Tax		-	-	-	-
NET PROFIT/LOSS FOR THE PERIOD		**10,025**	**-19,491**	**-88,101**	**170,840**

Condensed statement of comprehensive income for the Parent Company

SEK 000	Note	2022 Oct-Dec	2021 Oct-Dec	2022 Full-year	2021 Full-year
Net profit/loss for the period		10,025	-19,491	-88,101	170,840
Total comprehensive income/loss for the period		**10,025**	**-19,491**	**-88,101**	**170,840**

Condensed balance sheet for the Parent Company

SEK 000	Note	31 Dec 2022	31 Dec 2021
ASSETS			
Financial non-current assets			
Shares in portfolio companies at fair value through profit or loss	2,3	983,995	950,170
Other financial assets	4	59,537	61,799
Total non-current assets		**1,043,532**	**1,011,969**
Current assets			
Receivables from portfolio companies		211	505
Other financial assets	4	15,970	0
Other current receivables		673	768
Prepaid expenses and accrued income		750	2,940
Short-term investments at fair value through profit or loss		58,742	50,005
Cash and cash equivalents		131,078	42,398
Total current assets		**207,424**	**96,616**
TOTAL ASSETS		**1,250,956**	**1,108,585**
EQUITY AND LIABILITIES			
Total equity		**1,241,501**	**971,128**
Current liabilities			
Current interest liabilities	5	-	124,603
Other financial liabilities		191	1,756
Accounts payable		439	1,674
Other current liabilities		654	2,156
Accrued expenses and prepaid income		8,171	7,268
Total current liabilities		**9,455**	**137,457**
Total liabilities		**9,455**	**137,457**
TOTAL EQUITY AND LIABILITIES		**1,250,956**	**1,108,585**

Condensed statement of changes in equity for the Parent Company

SEK 000	Not	31 Dec 2022	31 Dec 2021
Opening balance, equity		**971,128**	**800,287**
Share capital		2,701	1,757
Share premium reserve		2,735,903	2,378,373
Retained earnings		-1,497,103	-1,409,002
Closing balance, equity		**1,241,501**	**971,128**

Notes to the Financial Statements

NOTE 1 Accounting policies

This report has been prepared in accordance with the International Accounting Standard (IAS) 34 Interim Financial Reporting and the Annual Accounts Act. The accounting policies applied to the Investment Entity and the Parent Company correspond, unless otherwise stated below, to the accounting policies and valuation methods used in the preparation of the most recent annual report.

Information on the Parent Company

Karolinska Development AB (publ) ("Karolinska Development," "Investment Entity" or the "Company") is a Nordic life sciences investment company. The Company, with Corporate Identity Number 556707-5048, is a limited liability company with its registered office in Solna, Sweden. The Company focuses on identifying medical innovations and investing in the creation and growth of companies developing these assets into differentiated products that will make a difference to patients' lives and provide an attractive return on investment to its shareholders. Investments are made in companies whose sole purpose is to generate a return through capital appreciation and investment income. These temporary investments, which are not investment entities, are designated "portfolio companies" below.

New and revised accounting principles 2022

No new or revised IFRS standards or recommendations from IFRS Interpretations Committee has had significant impact on the Investment Entity.

Related party transactions

The bridge loans, including accrued interest, totaling SEK 124.9 million was converted into shares in Karolinska Development's rights issue in February 2022. No further transactions with owners.

Definitions

Interim period: The period from the beginning of the financial year through the closing date.

Reporting period: January – December 2022.

Alternative Performance Measures

The Company presents certain financial measures in the interim report that are not defined under IFRS. The Company believes that these measures provide useful supplemental information to investors and the company's management as they allow for the evaluation of the company's performance. Because not all companies calculate the financial measures in the same way, these are not always comparable to measures used by other companies. Therefore, these financial measures should not be considered as substitutes for measures as defined under IFRS.

Portfolio companies: Companies where Karolinska Development has made investments (subsidiaries, joint ventures, associated companies and other long-term securities holdings) which are active in pharmaceuticals, medtech, theranostics and formulation technology.

The Portfolio Fair Value is divided into Total Portfolio Fair Value and Net Portfolio Fair Value.

Total Portfolio Fair Value: The aggregated proceeds that would be received by Karolinska Development and KDev Investments if the shares in their portfolio companies were sold in an orderly transaction between market participants at the measurement date.

Net Portfolio Fair Value (after potential distribution to Rosetta Capital) is the net aggregated proceeds that Karolinska Development will receive after KDev Investments' distribution of proceeds to Rosetta Capital.

rNPV: "risk-adjusted net present value" is a method to value risky future cash flows. rNPV is the standard valuation method in the drug development industry, where sufficient data exists to estimate success rates for all R&D phases.

Equity per share: Equity on the closing date in relation to the number of shares outstanding on the closing date.

Net debt: Interest-bearing liabilities (SEK 0.0 million) reduced with cash and cash equivalents (including short-term investments) (SEK 189.8 million).

Equity to total assets ratio: Equity divided by total assets.

Net asset value as of 31 December 2022:

SEK 000	Number of shares	Fair value	Part of Karolinska Developments' net asset value	
			SEK per share[3]	percentage
Listed assets				
Modus Therapeutics	6,144,821	28,951	0.11	2.3%
OssDsign	7,381,093	42,958	0.16	3.4%
Promimic	312,500	3,625	0.01	0.3%
Total listed assets		**75,534**	**0.28**	**6.0%**
Unlisted assets				
AnaCardio		45,138	0.17	3.6%
Dilafor		24,026	0.09	1.9%
Henlez		5,586	0.02	0.4%
PharmNovo		20,000	0.07	1.6%
SVF Vaccines (formerly Svenska Vaccinfabriken Produktion		12,867	0.05	1.0%
Umecrine Cognition		588,799	2.18	47.1%
KCIF Co-Investment Fund KB[1]		8,025	0.03	0.6%
KDev Investments[1]		204,020	0.76	16.3%
Total unlisted assets		**908,461**	**3.37**	**72.7%**
Net of other liabilities and debts[2]		**265,136**	0.98	**21.2%**
Total net asset value		**1,249,131**	**4.63**	**100.0%**

[1]The company has both listed and unlisted assets.
[2] Includes SEK 189.8 million cash and cash equivalents (including short-term investments).
[3] In relation to the number of shares outstanding (269,833,309) on the closing date.

NOTE 2 Shares in portfolio companies, at fair value through profit or loss

Change in fair value of portfolio companies

SEK 000	2022 Full-year	2021 Full-year
Result level 1		
Listed companies, realized	0	-433
Listed companies, unrealized	-22,408	-27,159
Total level 1	**-22,408**	**-27,592**
Result level 3		
Unlisted companies, realized	751	7,243
Unlisted companies, unrealized	-54,426	243,552
Total level 3	**-53,675**	**250,795**
Total	**-76,083**	**223,203**

Shares in portfolio companies, at fair value through profit or loss

SEK 000	2022-12-31	2021-12-31
Accumulated acquisition cost		
At the beginning of the year	950,170	770,320
Investments during the year	110,291	69,154
Sales during the year	-390	-112,507
Changes in fair value in net profit/loss for the year	-76,083	223,203
Closing balance	**983,995**	**950,170**

NOTE 3 Fair value

The table below shows financial instruments measured at fair value based on the classification in the fair value hierarchy. The various levels are defined as follows:

Level 1- Fair value determined on the basis of observed (unadjusted) quoted prices in an active market for identical assets and liabilities
Level 2- Fair value determined based on inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly
Level 3- Fair value determined based on valuation models where significant inputs are based on non-observable data

Fair value as of 31 December 2022

SEK 000	Level 1	Level 2	Level 3	Total
Financial assets				
Shares in portfolio companies, at fair value through profit or loss	75,534	-	908,461	983,995
Other financial assets	-	-	75,507	75,507
Cash and cash equivalents and short-term investments	189,820	-	-	189,820
Total	**265,354**	**0**	**983,968**	**1,249,322**
Financial liabilities				
Other financial liabilities	-	-	191	191
Total	**-**	**0**	**191**	**191**

Fair value as of 31 December 2021

SEK 000	Level 1	Level 2	Level 3	Total
Financial assets				
Shares in portfolio companies, at fair value through profit or loss	73,920	-	876,250	950,170
Other financial assets	-	-	61,799	61,799
Cash, cash equivalents and short-term investments	92,403	-	-	92,403
Total	**166,323**	**0**	**938,049**	**1,104,372**
Financial liabilities				
Other financial liabilities	-	-	1,756	1,756
Total	**-**	**0**	**1,756**	**1,756**

Fair value (level 3) as of 31 December 2022

SEK 000	Shares in portfolio companies	Other financial assets	Other financial liabilities
At beginning of the year	876,250	61,799	1,756
Acquisitions	86,276	-	-
Compensations	-390	-5,485	-324
Gains and losses recognized through profit or loss	-53,675	19,193	-1,241
Closing balance 31 December 2022	**908,461**	**75,507**	**191**
Realized gains and losses for the period included in profit or loss	751	5,485	-
Unrealized gains and losses in profit or loss for the period included in profit or loss	-54,426	13,708	1,241

Fair value (level 3) as of 31 December 2021

SEK 000	Shares in portfolio companies	Other financial assets	Other financial liabilities
At beginning of the year	732,554	41,181	5,726
Transfers from level 3	-36,752	-	-
Acquisitions	38,207	56,079	-
Compensations	-108,554	-722	-3,121
Gains and losses recognized through profit or loss	250,795	-34,739	-849
Closing balance 31 December 2021	**876,250**	**61,799**	**1,756**
Realized gains and losses for the period included in profit or loss	6,810	-	-
Unrealized gains and losses in profit or loss for the period included in profit or loss	243,985	-34,739	-849

The Investment Entity recognizes transfers between levels in the fair value hierarchy on the date when an event or changes occur that give rise to the transfer.

Shares in portfolio companies (Level 3) as of 31 December 2022

SEK 000	Ownership	Market value	Valuation model[1]
AnaCardio	20.7%	45,138	Last post money
Dilafor	1.5%	24,026	Last post money
Henlez	13.5%	5,586	Last post money
PharmNovo	13.1%	20,000	Last post money
SVF Vaccines (formerly Svenska Vaccinfabriken Produktion)	34.8%	12,867	Last post money
Umecrine Cognition	72.6%	588,799	External valuation[2]
KCIF Co-Investment Fund KB	26.0%	8,025	A combination of share price listed company and fair value of financial asset[3]
KDev Investments	90.1%	204,020	A combination of last post money and share price listed company[4]
Total level 3		**908,461**	

[1]See The Annual Report 2021 Valuation of portfolio companies at fair value, for a description of valuation models.
[2]Risk adjusted external valuation by an independent valuation institute in December 2022. The external valuation resulted in an rNPV value which Karolinska Development has adjusted further in order to reflect an assumed split in risk and revenues in conjunction with a license deal and also to incorporate the financial risk that Umecrine Cognition will not manage to finance fully the final parts of the research program.
[3]KCIF Co-Investment Fund KB holds listed shares which are valued in accordance with the closing rate on the final trading day of the period and a financial asset, at fair value through profit or loss, attributable to earn-out in the sale of Forendo Pharma.
[4]KDev Investments AB holds both listed shares which are valued in accordance with the closing rate on the final trading day of the period and unlisted shares which are valued in accordance with the most recent transaction (post-money valuation). Dilafor, which is an unlisted company, accounts for 91% of the total fair value in KDev Investments.

Impact of Portfolio Fair Value

In the table below, "Total Portfolio Fair Value" is as defined in Note 1.

Impact on Portfolio Fair Value of the agreement with Rosetta Capital

"Potential distribution to Rosetta Capital", SEK 328,5 million, is the amount that KDev Investments according to the investment agreement between Karolinska Development and Rosetta Capital is obligated to distribute to Rosetta Capital from the proceeds received by KDev Investments (KDev Investments Fair Value). The distribution to Rosetta Capital will only happen when KDev Investments distribute dividends. KDev Investments will only distribute dividends after all eventual payables and outstanding debt has been repaid. Following dividends from KDev Investments during 2021 and 2022, all additional investments totaling SEK 44.2 million have been repaid to Rosetta Capital. In addition, SEK 1.3 million has been distributed, which reduce the first SEK 220 million in the waterfall structure. See also the annual report for 2021, note 17, for a description of the agreement with Rosetta Capital.

"Net Portfolio Fair Value (after potential distribution to Rosetta Capital)" is as defined in Note 1.

Expanded Portfolio Fair Value calculations taking the portfolio valuation and potential distribution to Rosetta Capital in consideration

SEK 000	31 Dec 2022	30 Dec 2021
Karolinska Development Portfolio Fair Value (unlisted companies)	704,443	652,377
Karolinska Development Portfolio Fair Value (listed companies)	75,534	73,920
KDev Investments Portfolio Fair Value	532,547	566,807
Total Portfolio Fair Value	**1,312,524**	**1,293,104**
Potential distribution to Rosetta Capital of fair value of KDev Investments	-328,529	-342,934
Net Portfolio Fair Value (after potential distribution to Rosetta Capital)	**983,995**	**950,170**

NOTE 4 Other financial assets

SEK 000	2022-12-31	2021-12-31
Other financial assets, non-current		
Earn-out agreement Forendo Pharma[1]	59,537	61,799
Earn-out agreement Oncopeptides[2]	0	0
Total	**59,537**	**61,799**
Other financial assets, current		
Earn-out agreement Forendo Pharma[1]	15,970	-
Total	**15,970**	**0**

[1]Karolinska Development is entitled to earn-out payments according to the agreement with Organon regarding the sale of Forendo Pharma, se below.
[2]Karolinska Development is entitled to a 5% earn-out payment according to an agreement with Industrifonden. The earn-out payment is received when Industrifonden divests its holding in Oncopeptides. The value is estimated as of the balance sheet date at SEK 0.0 million. Maximum residual value amounts to KSEK 40,459.

Earn-out agreement Forendo Pharma

Karolinska Development estimates the risk-adjusted net present value (rNPV) of future cash flows (earn-outs), after the initial payment in December 2021 and minor payments in May and December 2022, to SEK 75.5 million, whereof SEK 15.0 million is expected to be paid during 2023. The earn-outs are expected to be paid during the period 2023–2034, and renewed rNPV valuations will be performed continuously. Forendo Pharma's previously shareholders are entitled to additional future payments totaling USD 870 million upon the achievement of certain development, registration and commercial milestones pertaining to Forendo Pharma's drug candidates.

NOTE 5 Liabilities to related parties

SEK 000	31 Dec 2022	30 Dec 2021
Current interest liabilities		
invoX Pharma Ltd[1]	-	70,000
invoX Pharma Ltd[2]	-	42,500
Accrued interest Sino Biopharmaceutical	-	12,103
Total	**0**	**124,603**

The bridge loans and accrued interest, in total SEK 124.9 million, was converted into shares in Karolinska Development's rights issue in February 2022.

Related parties refer to the main owner invoX Pharma Ltd, which in turn is a wholly owned subsidiary of the former main owner Sino Biopharmaceutical Ltd.

NOTE 6 Pledge assets and contingent liabilities

SEK 000	31 Dec 2022	31 Dec 2021
Pledge assets		
Contingent liabilities		
Investment agreement in portfolio company	7,580	12,927
Summa	**7,580**	**12,927**