Due Diligence and Valuation Report

Arrowhead code:	69-08-01
Coverage initiated:	28 03 2019
This document:	11 07 2019
Fair share value bracket:	SEK14.2-SEK17.4
Share Price (10th July):	SEK 10.68

Analyst
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Company:	Immunicum AB
Ticker:	OMX: IMMU
Headquarters:	Stockholm, Sweden
CEO:	Carlos de Sousa
Website:	https://www.immunicum.se

Market Data[i]

52-Week Range:	SEK6.20 – SEK13.22
Average Daily Volume:	621,318[ii]
Market Cap. on date:	1017 M

Fiscal Year (FY) January 1 – December 31

Immunicum AB ("Immunicum" or "the Company") is a pre-clinical stage Swedish Immuno-Oncology company that is developing cell-based immune therapies for the treatment of a wide range of solid tumors. These therapies aim to treat cancer indications with limited effective treatment alternatives, by strengthening the patients' immune system.

Immunicum expects to achieve a breakthrough by being the first company to launch a one-size-fits-all immuno-oncology therapy that can be readily used in combination with other anti-cancer treatments such as Tyrosine Kinase Inhibitors ("TKI"), Checkpoint Inhibitors (CPIs) and chemotherapy drugs.

Immunicum's key treatment, Ilixadencel, is being developed as a universal off-the-shelf immune primer that eliminates the need to create personalized treatments and can be produced on a large scale without the need for expensive patient-specific adaptations.

Ilixadencel is based on the Company's patented pro-inflammatory allogeneic Dendritic Cells ("DC") technology that extracts allogeneic DCs from the blood of healthy donors and induces a personalized anti-tumor immune response. It is currently being tested as a combination treatment for six different tumor indications namely Renal Cell Carcinoma, Hepatocellular Carcinoma, Non-Small Cell Lung Carcinoma, Gastrointestinal Tumors, Head & Neck Squamous Cell Carcinoma and Gastric Adenocarcinoma.

Given due diligence and valuation estimations based on rNPV Valuation, NPV Valuation, and Company Comparable Valuation methods, we believe that the fair value bracket for Immunicum is SEK14.2 to SEK17.4.

Unique one-size-fits-all therapy that eliminates the cost and time-lag of a customized therapy

Ilixadencel does not require patient-specific adaptation and hence can be manufactured on a large scale making it a cheaper and much faster treatment option. This is unlike other immune primers presently available on the market, that are custom created using patient-specific cells. These individualized cancer vaccines are an expensive and time-consuming treatment option and cannot be produced on a large scale.

See important disclosures on page 35 of this report.

Promising results for Ilixadencel with low rate of treatment-related serious adverse events

Trials conducted till date have shown promising early efficacy results with over 90 patients treated with Ilixadencel. The number of serious adverse events ("SAE") observed in these studies has been low this far with fever being the most commonly observed SAE. Clinical findings suggest that the combination of Ilixadencel with other anti-cancer treatments may have a synergistic anti-tumor effect in the patient.

MERECA study to test the efficacy of Ilixadencel in combination with Pfizer's Sunitinib

The MERECA (Metastatic Renal Cell Carcinoma) study is being conducted to investigate the clinical efficacy of Ilixadencel in combination with Pfizer's TKI, sunitinib, in newly diagnosed Metastatic Renal Cell Cancer patients. Immunicum received FDA approval for Ilixadencel's Investigational New Drug (IND) application in December 2016 and then expanded the MERECA study into the US in the second quarter of 2017. Top-line results from the MERECA study are expected in the third quarter of 2019.

Collaboration and supply agreement with Merck and Pfizer to test efficacy of Ilixadencel in combination with CPI Avelumab

ILIAD is a multi-indication study being conducted by Immunicum to evaluate the safety and efficacy of Ilixadencel in combination with a CPI.

Immunicum received FDA approval to test Ilixadencel in combination with Keytruda (Pembrolizumab) in patients with Head & Neck Squamous Carcinoma, Non-Small Cell Lung Carcinoma, and Gastric Adenocarcinoma in June 2018. In November 2018 the Company entered into a collaboration with Merck and Pfizer to evaluate Ilixadencel in combination with the CPI Avelumab (Bavencio).

Patent protected in key US and European markets at least until 2031

Immunicum has patented its therapies and manufacturing processes under eight different patent families in the US and several countries in Europe and Asia. Patent protection will ensure market exclusivity for Ilixadencel and other therapies until at least 2031, after which the Company can potentially apply for more patents through Supplementary Protection Certificates (SPC), to further strengthen the patent protection.

Milestone-based licensing agreement expected by end of 2021

Immunicum retains all commercial rights for Ilixadencel and plans to enter into licensing agreements with larger pharmaceutical companies by the end of 2021, as the therapy moves closer to regulatory approval. In the long run, the Company plans to partner with major pharmaceutical companies to co-develop its therapies.

We expect Immunicum to enter into a licensing agreement with a larger pharmaceutical company by the end of 2021, for all six indications of Ilixadencel. All clinical development costs will be borne by the partner and Immunicum will receive an upfront payment of $100 million with subsequent milestone payments and a 10% royalty on the total revenue generated through Ilixadencel.

Although, we believe that Immunicum is adequately capitalized to fund clinical trials and development research till 2021, the Company will have to raise additional capital in case it is unable to strike a deal with a suitable pharmaceutical company.

Global commercially ready supply chain to reduce time to market post approval

Immunicum has entered in a collaboration with HCATS to develop a global commercially ready supply strategy. The Company has started investing in Chemistry, Manufacturing, and Control ("CMC") activities to have a commercially ready production process in place as per the regulatory requirements in the EU and the US.

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Stock Information

Listed on the Nasdaq OMX First North Premier in 2013

Immunicum was founded in 2002 after being spun-off from Sahlgrenska University Hospital in Gothenburg, Sweden. Immunicum was first listed on the Nasdaq OMX First North Premier Stock Exchange on 22 April 2013. The Company's last day of trading on the Nasdaq OMX First North Premier was 12 January 2018.

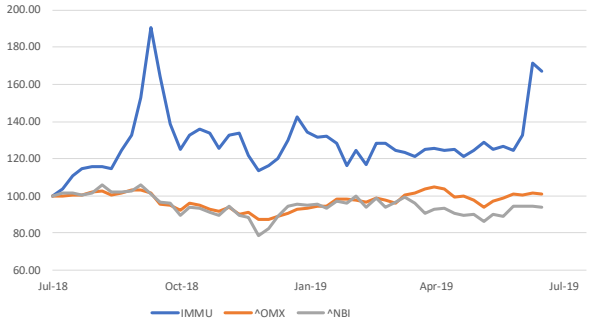
Listed on the Nasdaq Stockholm in 2018

Immunicum got listed on the main exchange of Nasdaq Stockholm under the ticker IMMU with 50,958,531 ordinary shares and a listing price of SEK 8 on 15 January 2018. The Company's market capitalization based on the listing price was SEK 407 million.

Outperformed in the last 52 weeks relative to competitors and major indices

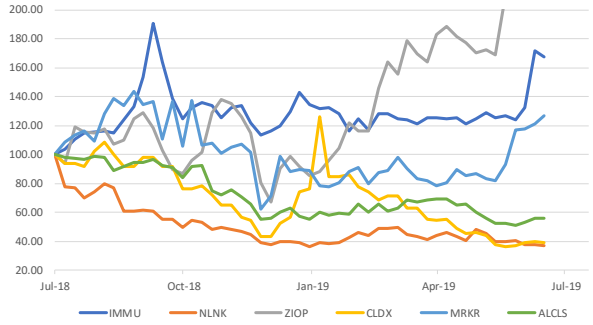
Immunicum's stock significantly outperformed the two most relevant major indices in the 52 weeks to July 09, 2019. Over this period, Immunicum's stock generated a return of 67 %, while the OMX Stockholm 30 and Nasdaq Biotechnology Indices generated returns of 1.1% and -5.9%, respectively. Immunicum outperformed all five of its closest listed competitors, viz. Newlink Genetics Crop., Ziopharm Oncology Inc, Celldex Therapeutics, Marker Therapeutics, and Cellectis SA.

Immunicum 52-week stock performance vs major indices



Source: Morningstar

Immunicum 52-week stock performance vs competitors



Source: Morningstar

Immuno-Oncology[i]

Immuno-oncology ("IO") is the study and development of treatments that take advantage of the body's immune system to fight cancer.

Cancer-targeting Immunotherapies

Cancer-targeting immunotherapies invigorate the body's own immune system to recognize cancer cells as foreign bodies that should be attacked. This can be challenging, as the body is unable to differentiate between the two.

White blood cells have an immune checkpoint molecule that alerts them to recognize and attack any foreign body. This checkpoint molecule prevents the immune system from attacking normal cells. Drugs called Checkpoint Inhibitors ("CPIs") block this molecule, allowing the immune cells to recognize cancer cells as foreign bodies and attack them.

Immunotherapy Approaches

- **Monoclonal Antibodies**
  Monoclonal Antibodies ("mAb") are lab-generated special proteins that target specific tumor antigens, i.e. substances that the immune system identifies as foreign or dangerous.
- **Checkpoint Inhibitors (Immune Modulators)**
  Checkpoint Inhibitors ("CPIs"), also known as Immune Modulators, trigger an anti-cancer response in the immune system, allowing the immune system to attack against cancer. These drugs may be used alone or in combination with conventional therapies, including chemotherapy, radiation, and targeted therapies.
- **Therapeutic Cancer Vaccines**
  Therapeutic vaccines trigger the immune system to recognize and attack certain markers or antigens present on cancer cells. Unlike vaccines that try to prevent disease, therapeutic cancer vaccines try to treat the disease.
- **Oncolytic Virus Immunotherapy**
  Oncolytic viruses are viruses that directly kill cancer cells and can also activate cells of the immune system, such as dendritic cells and T cells, to target and eliminate cancer throughout the body. Oncolytic viruses may genetically be modified to become more cancer-specific or produce immune-stimulating chemicals. This immunotherapy is often used in combination with other cancer immunotherapies including cancer vaccines and mAb therapies.
- **Adoptive T Cell Transfer**
  Adoptive T cell transfer is an anti-cancer approach that enhances the natural cancer-fighting ability of the body's T cells by removing immune system cells, growing and/or making changes to them outside of the patient's body, and then infusing them back into the body. T cells are extracted from the body and equipped with special receptors called Chimeric Antigen Receptors ("CAR") that recognize and attack cancer cells.

i The Cancer Research Institute

- **Cytokines**
  Cytokines are messenger molecules that help control the growth and activity of immune system cells and blood cells. Interleukins ("IL") are Cytokines that help immune cells grow and divide more quickly. Interferons ("IFN") are Cytokines that boost the ability of certain immune cells to attack cancer cells.

- **Adjuvant Immunotherapy**
  Adjuvant immunotherapies are used alone or in combination with other immunotherapies to boost the immune response. Adjuvant Immunotherapies can improve responses to therapeutic cancer vaccines that require the work of T cells or other immune cells. Some Adjuvant Immunotherapies use ligands (molecules that can bind to protein receptors) to boost immune responses.

Clinical research has shown that immunotherapies work well in combination with other treatment types, such as surgery, radiation, chemotherapy, and targeted therapies i.e. treatments designed to target specific cellular mechanisms that are important for the growth and survival of cancer cells.

Company Presentation

Immunicum is a clinical stage Swedish Immuno-Oncology ("IO") company that is developing allogeneic, off-the-shelf, cell-based immune therapies for the treatment of a wide range of solid tumors. These therapies aim to strengthen the patients' immune system so that it can detect and attack cancer cells. They are intended to be used in combination with other anti-cancer treatments to improve the efficacy of these treatments. Most of the immune-oncology therapies that are currently on the market have to be customized to the biochemistry of the user. Immunicum expects to achieve a breakthrough by being the first company to launch a one-size-fits-all immuno-oncology therapy that can be readily used in combination with other treatments.

Immunicum's pipeline consists of three distinct cancer therapies that are currently in clinical or pre-clinical stages. The Company's lead product, Ilixadencel, is being developed as a cancer immune primer in combination with other standard treatments that fight immune suppression for the effective and safe treatment of various types of cancer. The Company believes Ilixadencel has the potential to become the backbone component of modern cancer combination treatments in a variety of solid tumor indications.

Ilixadencel: A Unique, Off-The-Shelf Cancer Immune Primer

Ilixadencel is being developed as a unique cancer immune primer that eliminates the need to create personalized treatments by taking advantage of the patients' tumor-specific antigens. The therapy is based on Immunicum's patented pro-inflammatory allogeneic Dendritic Cells ("DC") technology. This technology extracts allogeneic DCs from the blood of healthy donors and induces a personalized anti-tumor immune response in each patient. Ilixadencel is currently being tested as a combination treatment with:

- Tyrosine Kinase Inhibitors ("TKI") such as Sunitinib
- PD-1 and PD-L1 Checkpoint Inhibitors
- Chemotherapy drugs such as gemcitabine

Ilixadencel is under clinical trials for six indications. These indications and the therapy's current stage of testing for each indication are in the table below.

Indication	Trial Stage	Comments
Kidney Cancer (RCC)	Phase II (MERECA)	Top-line results for Phase II expected in Q3 2019.
Liver Cancer (HCC)	Phase I/II	Positive results were published for Phase I/II clinical trial in January 2019, confirming safety and tolerability of Ilixadencel, both alone and in combination with current first-line standard of care, Sorafenib.

Gastrointestinal Stromal Tumors (GIST)	Phase I/II	Positive results were published for Phase I/II clinical trial in June 2019, confirming safety and tolerability of Ilixadencel, in combination with TKIs in six patients with GIST.
Head and Neck Cancer (HNSCC)	Phase Ib/II (ILIAD)	Top-line results for Phase Ib/II study are expected in 2020.
Non-Small Cell Lung Cancer (NSCLC)	Phase Ib/II (ILIAD)	Top-line results for Phase Ib/II study are expected in 2020.
Gastric Cancer (GA)	Phase Ib/II (ILIAD)	Top-line results for Phase Ib/II study are expected in 2020.

How Does It Work?

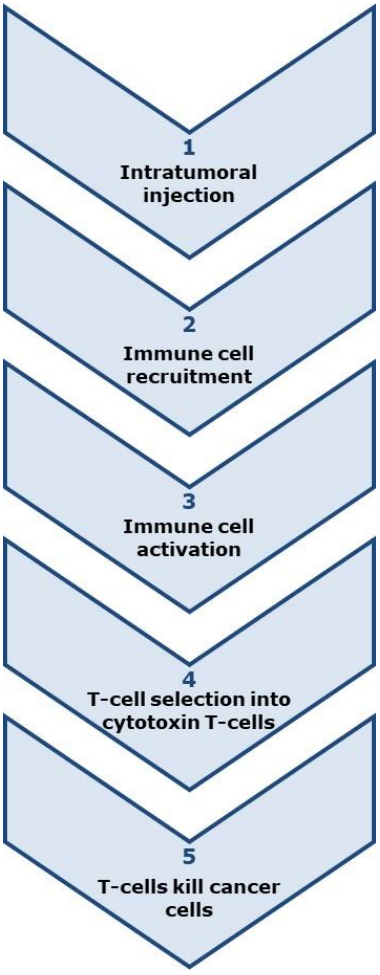
1. Ilixadencel cells are injected directly into the tumor. These cells survive for 48 to 72 hours after being injected and release immuno-stimulating factors, including chemokines and cytokines.

2. These immuno-stimulating factors within the tumor induce local recruitment and activation of endogenous immune cells (immune cells from the patient), including natural killer ("NK") cells, immature DCs and T cells.

3. The recruitment of the patient's own DCs takes place inside the tumor, where there are high levels of tumor-specific antigens. These antigens combine with the recruited DCs and become "loaded".

4. Once the DCs are loaded and activated by the inflammatory environment created by Ilixadencel, they migrate to the nearby lymph nodes where they prime (activate) tumor-specific T cells, including CD8+ T cells.

5. These T cells migrate from the lymph node, through blood circulation to search for and kill tumor cells within the primary tumor as well as metastases anywhere else in the body.



What Makes Ilixadencel Unique?

Ilixadencel is being developed as a treatment for cancer indications with limited effective treatment alternatives. Since Ilixadencel is not patient-specific, patient-specific tumor antigens are not required for the manufacturing process. This makes Ilixadencel an off-the-shelf product which can be produced on a large scale without the need for making expensive patient-specific adaptations.

Ilixadencel targets all major aspects of tumor-specific immune priming:

- Recruitment of Natural Killer cells as well as dendritic cells into the tumor
- Induction of local tumor cell death leading to increased release of tumor-specific antigens
- Maturation of antigen-loaded dendritic cells for subsequent migration to tumor-draining lymph nodes where the dendritic cells activate/prime tumor-specific T cells.

Ilixadencel vs Other Immune Primers

Ilixadencel	Other Immune Primers
An off-the-shelf immune primer that utilizes the patients' own tumor as the neoantigen source.	Used in combination with patient-specific tumor antigens.
Eliminates the need for extracting the patients' tumor cells.	Individualized cancer vaccines prepared using unique biopsy cell sample from the patient's own tumor.
A universal off-the-shelf product that can be used on by patients without the need to customize.	Custom-created for individual use. Expensive and time-consuming treatment that cannot be produced on a large scale.
Engages the entire immune system activation process.	Only address parts of the immune priming process.

Promising results for Ilixadencel with Low Rate of Treatment-Related Serious Adverse Events

Immunicum has completed a Phase I/II trial for Ilixadencel, for the treatment of Kidney Carcinoma and Liver Carcinoma, and is currently conducting a Phase II study (MERECA) in RCC, a Phase I/II study in Gastrointestinal Stromal Tumors and a Phase Ib/II (ILIAD) study with checkpoint inhibitors in Head and Neck Carcinoma (HNSCC), Non-Small Squamous Cell Lung Carcinoma (NSCLC) and Gastric Adenocarcinoma (GA). Trials conducted till date have shown promising early efficacy results.

Over 90 patients have been treated with Ilixadencel in clinical studies to date. The number of serious adverse events ("SAE") in the Company's studies has been low this far. The SAE observed has mainly been fever which is a natural reaction to a stimulation of the immune system and is an expected outcome of treatment with inflammatory and immune activating substance such as Ilixadencel.

Indication	Combination	Trial Stage	Data from Previous Trials
Kidney Cancer (RCC)	Kinase Inhibitors (TKI)	Phase II (MERECA)	• The immunology data showed clear signs of tumor-specific immune activation. • Median survival for the patient group increased from the expected median survival of 14-16 months for standard sunitinib treatment to 48 months. • Top-line results for Phase II expected in Q3 2019.
Liver Cancer (HCC)	Kinase Inhibitors (TKI)	Phase II	• Positive results regarding safety and tolerability of Ilixadencel, both when given as a single treatment and in combination with the first line standard treatment, sorafenib. • Increased levels of tumor-specific CD8 + T cells in circulating blood were demonstrated for the majority of evaluable patients, indicating a systemic immunological response.
Gastrointestinal Stromal Tumors (GIST)	Kinase Inhibitors (TKI)	Phase I/II	• The primary objective of the study is to examine the safety and tolerance of Ilixadencel in combination with TKI such as Sunitinib.

Head and Neck Cancer (HNSCC) & Non-Small Cell Lung Cancer (NSCLC) & Gastric Cancer (GA)	Checkpoint Inhibitors (CPI)	Phase Ib/II (ILIAD)	• The ILIAD study is a multi-indication study to evaluate the safety and efficacy of Ilixadencel in combination with a CPI at standard doses. • In June 2018 Immunicum received FDA approval to test Ilixadencel in combination with Keytruda (Pembrolizumab) in patients with HNSCC, NSCLC, and GA. • In November 2018 the Company entered into a collaboration with Merck and Pfizer to evaluate Ilixadencel in combination with the CPI Avelumab (Bavencio).

MERECA Trial

The MERECA trial is an international, randomized, controlled and open Phase II clinical trial that is being conducted by Immunicum to examine the safety, tumor-specific immune activation and potential clinical efficacy of Ilixadencel. The primary purpose of the MERECA study is to investigate the clinical efficacy of treatment with Ilixadencel in combination with sunitinib in newly diagnosed Metastatic Renal Cell Cancer patients. The study is designed to provide data on the median overall survival and overall survival rate at 18 months for all patients with poor and intermediate prognosis.

Immunicum received FDA clearance for Ilixadencel's Investigational New Drug (IND) application in December 2016 and then expanded the MERECA study into the US in the second quarter of 2017. MERECA study's top-line results are expected in the third quarter of 2019.

ILIAD Collaboration and Supply Agreement with Merck KGaA and Pfizer

In November 2018, Immunicum announced a collaboration with Merck KGAa and Pfizer for the evaluation of Ilixadencel in combination with the Checkpoint Inhibitor Avelumab (Bavencio). Immunicum has named its multi-indication Phase Ib/II CPI combination trial ILIAD. The name represents Ilixadencel in combination with Checkpoint Inhibitors in advanced cancer patients. The trial will test the safety and efficacy of Ilixadencel in combination with Avelumab in patients with Head and Neck Squamous Cell Carcinoma, Non-Small Cell Lung Carcinoma and Gastric & Gastroesophageal Junction Adenocarcinoma. Immunicum will be responsible for the implementation of the study and will retain all commercial rights to Ilixadencel.

Manufacturing Ilixadencel: Chemistry, Manufacturing, and Control (CMC) Activity

The Company is expecting successful results from the MERECA trials and is investing in Chemistry, Manufacturing, and Control ("CMC") activities to have a commercially ready production process in place as per regulatory requirements in the EU and US. Immunicum has entered into a collaboration with HCATS to develop a global commercially ready supply strategy. Implementation of a well-defined process control strategy will result in high product quality and consistency as well as reduce risks related to equipment, facility and product comparability.

Ilixadencel can be produced in a short time span of 6 days, using standard culture instruments. The therapy has a shelf life of three years and hence can be easily stocked at pharmacies for quick access as and when required.

Strategic Collaborations and Growth Strategy

Immunicum's strategy is to position Ilixadencel as the first choice among cancer immune primers in combination with anti-immunosuppression treatments such as checkpoint inhibitors. Anti-immunosuppressants block proteins that stop the immune system from attacking the cancer cells and trigger an anti-cancer response in the immune system, allowing the immune system to attack against cancer.

Immunicum plans to enter into licensing agreements with larger pharmaceutical companies by the end of 2021, as the therapy moves closer to market approval. In the long run, the Company plans to partner with major pharmaceutical companies to co-develop its therapies. In case Immunicum is unable to partner with a suitable pharmaceutical company, the Company will raise fresh capital and continue to test its treatments internally.

IMM-2: Immune Primer and Cancer Vaccine Platform for Selected Neoantigens

IMM-2 is being developed an off-the-shelf vaccine in which allogeneic DCs are pre-loaded with selected neoantigens through a proprietary adenovirus vector. IMM-2 is currently on preclinical testing phase and is being developed to destroy tumors by recruiting and activating the patient's immune cells to the injection site and endowing them with the potential to subsequently prime the immune cells circulating in the body to recognize and infiltrate the tumor.

Although IMM-2 shares the same technology platform as Ilixadencel, IMM-2 is transfected with an adenoviral vector to deliver tumor antigens directly to the cells. These cells are then injected subcutaneously (under the skin) as opposed to Ilixadencel's intratumoral injection.

IMM-3: Enhanced (CAR-)T Cell Expansion for Durability and Longevity

IMM-3 is based on CAR-T cell therapy approach where T cells are isolated from peripheral blood, genetically engineered and expanded outside of the body before being re-infused into the patients.

IMM-3 exploits allogeneic DCs outside of the body to enhance immune cell production with the goal of supporting CAR-T treatment efficacy in treating blood cancers and solid tumors. The therapy has been designed using the Immunicum's expertise in allogeneic DC biology and can provide CAR-T companies with a superior platform to expand CAR-T cells with improved anti-tumor activity as well as higher

resistance to oxidative stress and immunosuppressive factors that they must face in the tumor environment. Immunicum is seeking collaborations with selected partners in the CAR-T cell space to commercialize IMM-3.

Strong Patent Protection until 2031

Immunicum has patented its therapies as well as the manufacturing processes in eight different patent families in the US and several countries in Europe and Asia. Patent protection will ensure exclusivity to Ilixadencel and other therapies until at least 2031, after which the Company can potentially apply for more patents through Supplementary Protection Certificates (SPC), to further strengthen the patent protection.

Patent	Key Markets	Expiry Date	Patent Title
Ilixadencel	US, Japan, UK, Europe	Feb-2031	Improved composition for inhibiting tumor cell proliferation.
Production	US, Europe	Dec-2033 Jan-2034 (US)	Co-differentiation of monocytes from allogeneic donors.
IMM-2	US, England, Europe	Jun-2022 Dec-2023 (US)	New method and composition for producing cellular allogenic vaccine.
IMM-2 Adenovirus	US	May-2033	Hexon tat-ptd modified adenovirus and uses thereof.
IMM-3	US, Japan	Oct-2030	Method for proliferation of antigen-specific T cells.
IMM-3 Antiviral	US	Apr-2032	Method for priming of T cells.
IMM-3	US, Japan, Others	Apr-2032	Method for proliferation of antigen-specific T cells.

News

Positive topline results from Phase I/II clinical trials of Ilixadencel for the GIST indication:
June 12, 2019
Immunicum announced completion and positive topline results from the phase I/II trials for examining the safety and tolerability of Ilixadencel in combination with TKIs in six patients with GIST. The outcome of the GIST study supports Ilixadencel's potential as a safe and effective cell-based, off-the-shelf immune primer in a range of solid tumor cancers.

First patient treated in phase Ib/II ILIAD combination trial:
February 11, 2019
Immunicum announced that the first patient was treated in Ilixadencel's Phase Ib/II ILIAD trials. The ILIAD trial is being conducted to evaluate the safety and efficacy of Ilixadencel, in combination with checkpoint inhibitors (CPIs) in Head and Neck Cancer, Non-Small Cell Lung Cancer and Gastric Cancer. The initial Phase Ib portion of the trial will be conducted at clinical centers in the United States.

Share issue with preferential rights for existing shareholders:
January 31, 2019

Immunicum implemented a share issue with preferential rights for the Company's existing shareholders. The rights issue increased the Company's shares and votes by 20,383,412, resulting in an increase in the Company's share capital by SEK 1,019,170.60. As on January 31, 2019, Immunicum's total share capital and total number of shares and votes were SEK 4,612,876.55 and 92,257,531, respectively.

Changes to the nomination committee:
January 30, 2019

Immunicum announced the change in the composition of the nomination committee which was announced on October 19, 2018. The ownership structure of the Company changed after the shares issue and the nomination committee for AGM 2019 changed in accordance with the rules of procedure adopted by the AGM.

Publication of Phase I/II Clinical Trial Results of Ilixadencel in Advanced Hepatocellular Carcinoma in Frontiers in Oncology:
January 21, 2019

Immunicum announced the publication of the final data analysis from the exploratory clinical study of Ilixadencel in patients with Advanced Hepatocellular Carcinoma (HCC), in the journal, Frontiers in Oncology. The data confirmed previously communicated positive safety and tolerability of Ilixadencel when administered both alone and in combination with current first-line standard of care, sorafenib.

Listing Information

Immunicum AB, headquartered in Stockholm, Sweden, is listed on the Nasdaq Stockholm (OMX: IMMU).

Contacts

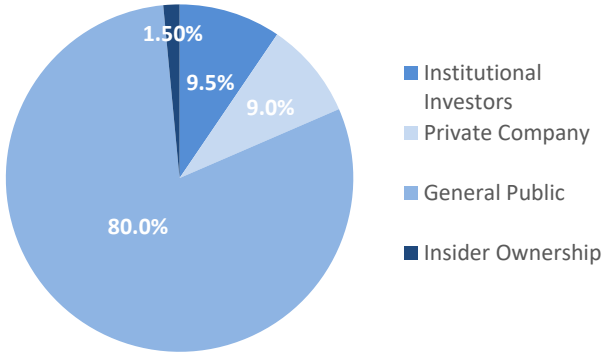
Registered office	Östermalmstorg 5, 114 42, Stockholm, Sweden
Telephone	+46 (0)8 732 8400
E-mail	info@immunicum.com

Shareholding Structure as on 27 February 2019

Institutional investors own 9.5% of Immunicum's outstanding shares. The general public, mostly retail investors hold a substantial 80% in Immunicum. Private companies own a stake of 9% in Immunicum.

The Company's largest shareholders presently include Avanza Pension, Nordnet Pension Insurance, Fourth Swedish National Pension Fund, Gladiator and Mr. Martin Lindstrom (member on the board of Immunicum). These investors jointly hold a 27.3% stake in Immunicum.

General Public Owns 80% of Immunicum



Source: Yahoo Finance

Top 10 Shareholders as on 30 April 2019

Equity Holder	No. of ordinary shares held	% shareholding
Avanza Pension	8,275,056	8.97%
Nordnet Pension Insurance	5,290,768	5.73%
Fourth Swedish National Pension Fund	4,500,000	4.88%
Gladiator	3,750,000	4.06%
Martin Lindstrom	3,335,331	3.62%
Holger Blomstrand Byggnads AB	2,975,386	3.23%
Second Swedish National Pension Fund	2,500,000	2.71%
Skandinaviska Enskilda Banken S.A	2,427,142	2.63%

Nordic Cross Asset Management	2,359,200	2.56%
BNP Paribas Sec Serv Luxembourg	1,800,000	1.95%
Others	55,044,648	59.66%
Total	**92,257,531**	**100%**

Source: Immunicum Annual Report 2018

Management

Carlos de Sousa
(Chief Executive Officer)

- Mr. de Sousa is the Chief Executive Officer (CEO) of Immunicum since 2016.
- Mr. de Sousa has over 25 years of experience in the global pharmaceutical and biotech industry including business development, mergers & acquisitions, global marketing, and clinical development. Prior to joining Immunicum, he served as the Chief Business Officer at Zealand Pharma in Denmark. He has held various management positions at Nycomed / Takeda, Pfizer, Novartis, BBB Therapeutics, and Newron Pharmaceuticals.
- Mr. de Sousa has completed his medical training from School of Medicine, University of Lisbon, and his Executive MBA from the Stern School of Business, New York University.

Michaela Gertz
(Chief Financial Officer)

- Ms. Gertz is the Chief Financial Officer (CFO) of Immunicum since 2018.
- She has over a decade of experience in the Life Sciences industry and has held various positions in finance.
- Prior to joining Immunicum, Ms. Gertz held various management positions including CFO & Investor Relations Manager at PledPharma AB and Head of Investor Relations & Financing at Accelerator Nordic AB.
- She worked at the venture capital company ITP Invest AB and at Handelsbanken Asset Management before entering the life science industry.

Dr. Peter Suenaert
(Chief Medical Officer)

- Dr. Suenaert is the Chief Medical Officer (CMO) of Immunicum since 2016.
- Dr. Suenaert has extensive experience in the pharmaceutical industry and has held various management positions including Global Clinical Program Lead for Oncology and Senior Director of Clinical Sciences at Glenmark Pharmaceuticals R&D, London; Director & Head of Clinical Development and Human Translational Research and member of the global management team Life Science at Danone Research, Paris; Clinical Research and Development Leader in global early cancer immune-therapeutics development at GlaxoSmithKline Vaccines, Belgium; and Clinical Research Senior Medical Scientist, Global Development, Haematology at AMGEN, U.K.
- Dr. Suenaert has completed his MD and Ph.D. from the University of Leuven, and his Postdoc from McGill University, Montreal and Institut Gustave-Roussy, Paris.

Dr. Alex Karlsson-Parra
(Co-Founder and Chief Scientific Officer)

- Dr. Karlsson-Parra is the Co-Founder and Chief Scientific Officer (CSO) of Immunicum since 2008.
- Dr. Karlsson-Parra has over two decades of experience in transplantation immunology and was the former chairman of the Swedish Expert Group for Clinical Immunology. He was awarded the Athena Prize, Swedish healthcare's most prestigious award for clinical research, in 2014.
- Dr. Karlsson-Parra was formerly an Associate Professor at Fylkesjukhuset in Hauegesund, Norway and chief physician at the Department of Clinical Immunology at Sahlgrenska University Hospital, Gothenburg.
- He has completed his MD and Ph.D. and is an adjunct professor in the field of Clinical Immunology at the Uppsala University.

Sharon Longhurst
(Head of CMC)

- Dr. Longhurst is the Head of Chemistry, Manufacturing, and Control at Immunicum since 2017.
- Prior to joining Immunicum, Dr. Longhurst held various management positions, including Senior CMC Manager at Akari Therapeutics and Principal Consultant of CMC at Parexel Consulting. She also worked as a Pharmaceutical Assessor at MHRA in London in the biologics/biotechnology unit and provided national and EU scientific advice for Advance Therapy Medicinal Products (ATMPs) for cell and gene therapy.
- She has completed her Ph.D. in Virology from the University of Warwick, UK.

Sijme Zeilemaker
(Senior Director Business Development)

- Mr. Zeilemaker is the Senior Director Business Development at Immunicum since 2017.
- Prior to joining Immunicum, Mr. Zeilemaker held various management positions including Director Business Development at InteRNA Technologies.
- Mr. Zeilemaker has completed his master's degree in Biomedical Sciences from Leiden University.

Margareth Jorvid
(Head of Regulatory Affairs and Quality Assurance)

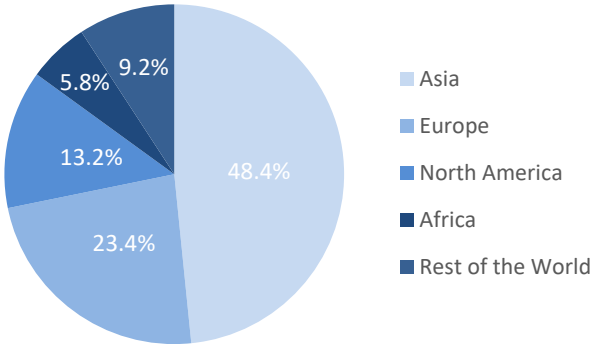
- Ms. Jorvid is the Head of Regulatory Affairs and the Quality Assurance Officer at Immunicum since 2016.
- Ms. Jorvid has over three decades of experience in Regulatory Affairs of the pharmaceutical industry. She has worked with large and small pharmaceutical companies such as Roussel Nordiska, Hoechst Marion Roussel, Neopharma (SME company that developed Duodopa for the treatment of severe Parkinson's disease) and the Swedish Medical Products Agency. She also served as a consultant in Regulatory Affairs and QA for pharmaceuticals and medical devices, as CEO of Methra Uppsala AB, LSM group.
- She is a Fellow and Honorary Life Member of The Organization for Professionals in Regulatory Affairs (TOPRA) and a board member of Methra Uppsala AB.
- Ms. Jorvid has completed her Master of Sciences of Pharmacy from Uppsala University. She has also completed a Master of Business Administration degree from Stockholm School of Economics and Master of Medical Technology Regulatory Affairs from Cranfield University.

Industry Analysis

According to estimates from the International Agency for Research on Cancer (IARC), in 2018 there were 18.1 million incident (new occurrence) cases of cancer and 9.6 million cancer deaths worldwide. The global burden is expected to grow to 29.5 million incident cases of cancer and 16.3 million cancer deaths by 2040.

48.4% of the incident cases worldwide in 2018 occurred in Asia. 23.7% of the global incident cases occurred in China alone. Europe, North America, and Africa respectively accounted for 23.4%, 13.2%, and 5.8% of the global incident cases of cancer in 2018.

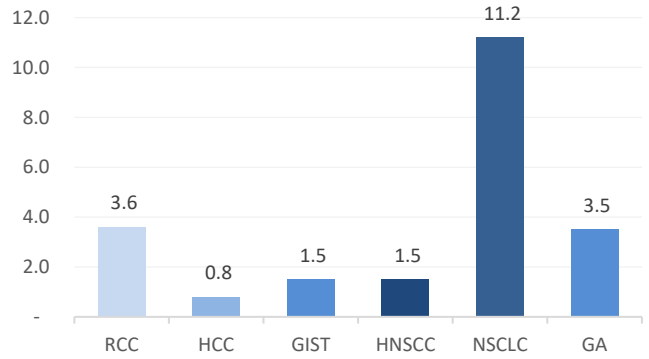
Estimated incident cases of cancer in 2018



Source: GLOBOCAN 2018, Global Cancer Observatory, International Agency for Research on Cancer 2018

Global market size of different indications by 2020

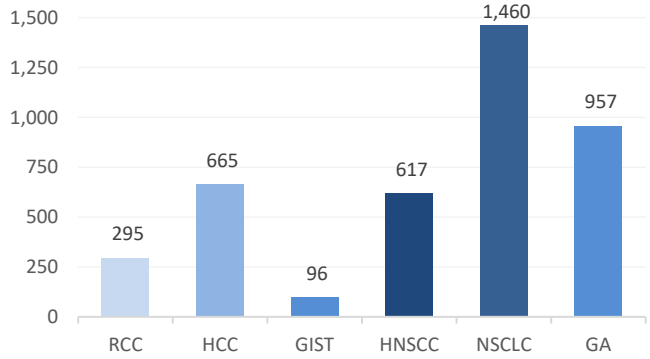
Market Size in $bn



Source: *GLOBOCAN 2018, Global Cancer Observatory, International Agency for Research on Cancer 2018*

New cases of cancer for different indications annually

Indication Size in $'000



Source: *GLOBOCAN 2018, Global Cancer Observatory, International Agency for Research on Cancer 2018*

Immunotherapy vs Conventional therapies

Immunotherapy is a targeted therapy for the treatment of cancer and the preferred choice due to the following reasons:

- **Universal treatment for different types of cancer**
  Immunotherapy enables the immune system to recognize and target cancer cells, making it a universal treatment for cancer.
- **Effective treatment when everything else fails**
  Immunotherapy has been an effective treatment for patients with certain types of cancer such as Melanoma, that have been resistant to chemotherapy and radiation treatment.

- **Long-term cancer remission**
  Immunotherapy trains the immune system to remember cancer cells which may result in longer-lasting remissions. Clinical studies on long-term overall survival show that the beneficial responses to cancer immunotherapy treatment are durable i.e. they can be maintained even after the treatment is complete.

- **Limited side effects**
  Immunotherapy focuses on the immune system and is more targeted than conventional treatments, such as radiation and chemotherapy. Radiation and chemotherapy damage healthy cells along with cancerous cells, which frequently result in nausea, hair loss, and other side effects. The side effects of immunotherapy are usually related to stimulation of the immune system and can range from fever to autoimmune disorders.

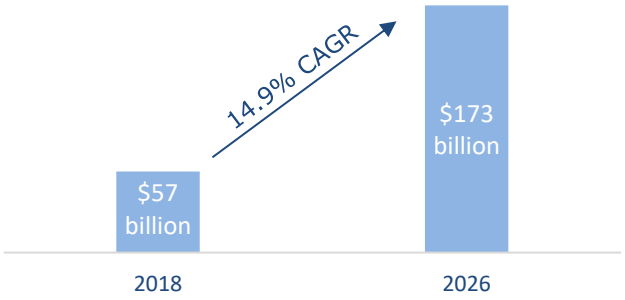
Immuno-Oncology – Fastest Growing Pharmaceutical Research Field

Immunotherapy is the next generation of cancer therapies as they have shown considerable effectiveness and lesser toxicity compared to traditional therapies.

The global Immuno-Oncology therapies market is expected to grow at a CAGR of 14.9% from $56.7 billion in 2018 to $172.7 billion in 2026[ii].

These growth expectations can be is attributed to the increasing incidence rates of various types of cancers and active research and development by pharmaceutical companies in the field of Immuno-Oncology therapies.

Global Immuno-Oncology market expected to reach $173 billion by 2026



Source: Coherent Market Insights

Immuno-Oncology landscape – Robust international pipeline marked by rapid growth

The oncology-drug pipeline has seen significant growth in the past two decades. The number of active compounds in oncology R&D nearly doubled between 2008 to 2016, with average annual R&D investments of over $50 billion. Currently, oncology makes up nearly 40% of the global clinical pipeline.

A high proportion of drugs in the industry's pipeline have come from the Immuno-Oncology segment. More than 40% of the annual R&D investment in oncology is made in the exploration of Immune Checkpoint Inhibitors both in monotherapy and in combination programs. Currently, there are over 1,500 IO clinical trials being conducted across 183 unique therapeutic uses, both in monotherapy and combination testing.

The global Immuno-Oncology pipeline grew significantly from 2,031 therapies in September 2017 to 3,394 therapies in September 2018, translating to a growth rate of 67%. 1,287 of these therapies are currently being evaluated in clinical studies.[iii]

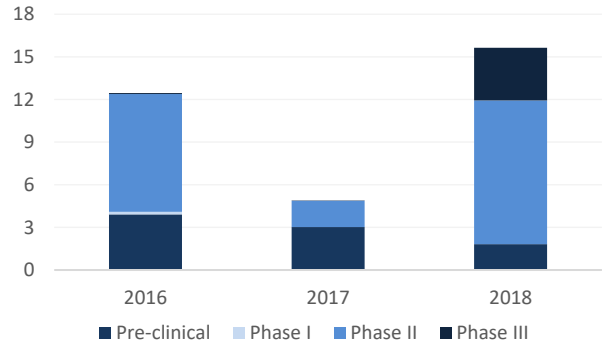
ii Coherent Market Insights
iii The Cancer Research Institute – Trends in the global immuno-oncology landscape

Mergers & Acquisitions in Immuno-Oncology

The Immuno-Oncology market has witnessed significant investment in research and development through various collaborations and research studies. According to EvaluatePharma, majority of the acquisitions of research stage companies between 2014 and 2018, have been of pre-clinical and mid-stage therapies.

- In 2015, leading drug manufacturer Merck & Co. entered into a strategic clinical research collaboration with MD Anderson Cancer Center for MD Anderson's drug Keytruda, a humanized antibody used in cancer immunotherapy.

Oncology company buyouts – Combined Value ($ billion)



Source: EvaluatePharma

- In 2015, Amgen entered into a strategic immunotherapy collaboration with Kite Pharma to develop and commercialize Chimeric Antigen Receptor (CAR) T cell therapies.
- Celsee Diagnostics and IncellDx entered into an immuno-oncology research agreement in 2017.
- Juno Therapeutics a clinical-stage cell immunotherapy company was acquired by Celgene in 2018 for $9 billion.

High Cost of Immuno-Oncology Therapies May Impede Rapid Industry Growth

The global cost of oncology therapeutics and supportive care drugs increased from $91 billion in 2012 to $113 billion in 2016. 46% of this increase came from the US alone. Cancer care costs are expected to continue growing rapidly and estimated to be $173 billion by 2020.

The average annual cost of cancer drugs has increased from less than $10,000 in 2000 to over $120,000 in 2015. The high cost of immuno-oncology therapies is unaffordable to the low- and middle-class population and is restraining the growth of the market. Mariah of Novartis and Yescarta of Gilead, two recently approved CAR-T treatments, are priced between $373,000 and $475,000 per patient, depending on the type of cancer being treated. These CAR-T treatments are customized for every individual patient over a period of three weeks, resulting in high manufacturing and processing costs of about $60,000 per patient.

Immunotherapies are expensive and treatments may cost over $100,000 annually. The treatment cost may become significantly higher when used in combination with other therapies and surgery. Although immunotherapy treatments are more expensive than other cancer treatments, if effective the treatments may turn out to be more cost-effective in the long run as the total cost of the therapy would be less than repeated courses of less effective options such as chemotherapy and radiation.

Pharmaceutical companies justify the exorbitant pricing by highlighting the value of these immunotherapy drugs and the continual investment into R&D.

Risk Profile Analysis

SUMMARY

Key Risks	Risk Rating	Rationale
Patent Expiry Risk	Low	Ilixadencel and other treatments are patent protected in key markets of Europe and the US until at least 2031 with the potential of additional patent protection, resulting in many years of exclusivity.
R&D Risk	High	No proven track record of developing a commercially successful treatment.
Competitive Risk	Medium-High	Although Immunicum's treatments are patent protected until 2031, the Company faces significant competitive risk from similar immunotherapies being introduced in the market.
Key Personnel Risk	High	High dependence on a few key individuals.
Overall	**Medium-High**	

1. Patent expiry risk

Risk Definition: Patents provide market exclusivity to biologics by prohibiting other drug developers to create biosimilars using the same process as the original developer. Patent protection provides biologics developers a greater strategic advantage than traditional pharmaceutical companies since they can patent different parts of the treatment development processes and keep the treatment under patent protection for extended periods of time, over fifteen years in some cases.

A biopharmaceutical company is at high patent expiry risk when its major treatments are facing imminent patent expiry, especially if the patent expiring is a composition-of-matter patent, and there are many less expensive biosimilars poised to eat into their revenues. In such cases, patent expiry is more hurtful to revenue when the biosimilars cost significantly less than the original treatment and the original treatment manufacturer has limited ability to close down the price gap.

Risk Analysis: Ilixadencel and Immunicum's other treatments are patent protected in key markets of Europe and the US, till 2031 with the potential of additional protection through Supplementary Protection Certificates (SPC). We, therefore, believe that these treatments have a low patent expiry risk.

Risk Rating: We believe that Immunicum has a ***LOW*** patent expiry risk because Ilixadencel and other treatments are patent protected in key markets of Europe and the US till 2031 with the potential of additional patent protection, resulting in many years of exclusivity.

2. R&D Risk

Risk Definition: Biologics are extremely complex and investment-intensive to develop and market because they require high precision at each step of the development process and must clear a stringent regulatory approval process. Despite this, companies in the biopharmaceutical space must continuously invest in the R&D of new treatments in order to continue growing. According to the World Intellectual Property Organization ("WIPO"), biopharmaceutical companies invest, on an average, 40% to 50% of their revenue on R&D. However, only 16% of their treatments that enter Phase I testing make it to the market.

A company is at high R&D risk when it does not have reliable access to capital to finance its R&D investments. A company's ability to finance its R&D initiatives may be uncertain if its free cash flows are significantly less than its R&D investment requirements. This shortfall forces it to finance its R&D investments with high leverage.

Risk Analysis: Immunicum is a preclinical research stage company that has not yet launched any cancer immune primers or any drug on the market, either independently or in collaboration. Immunicum will need to invest heavily in R&D for the clinical testing and development of its pipeline

Risk Rating: We believe that Immunicum has a ***HIGH*** R&D risk profile as it has no proven track record of developing a commercially successful treatment.

3. Competitive risk

Risk Definition: A company competes with many other businesses to maximize its market share. Its competitors include every entity that aims to fulfill the same customer need. Competitors may gain an advantage over the company by offering more value from similar products or by offering alternative solutions that better fulfill the same client need.

In the biopharmaceutical space, businesses are at competitive risk when other companies come up with treatments that are cheaper, safer and more effective. These alternative treatments may be biologics or conventional pharmaceutical drugs. The higher the number of competitors for a treatment, the higher is the competitive risk associated with it.

Risk Analysis: Immunicum operates in a highly competitive industry with many companies, universities, and research institutions engaged in research and development of immuno-oncology products that may compete with the Immunicum's pipeline in the future. Although the Company has patent protected its treatments until 2031, we do not expect these treatments to enter the market for at least two to three years. There are other companies developing similar immunotherapies which makes it possible for some of these therapies to enter the market before Ilixadencel.

Risk Rating: We believe Immunicum has a ***MEDIUM-HIGH*** competitive risk profile because of the risk of similar immunotherapies being introduced in the market before Ilixadencel.

4. Key personnel risk

Risk Definition: A company is considered to have high key personnel risk profile if its business activities depend heavily on a small number of individuals and the senior management team. The better the quality and profile of the senior management team and the higher the number of independent directors on the board, the lower is the company's key personal risk.

Risk Analysis: Immunicum is a professionally managed business with highly qualified and experienced management and board of directors. The Company's operations are highly dependent on a number of key individuals, some of whom hold senior positions and are shareholders in the company. If Immunicum is unable to recruit and retain key and other qualified personnel, it could have a significant negative impact on the company's operations, financial results and financial position.

Risk Rating: We believe Immunicum has a ***HIGH*** key personnel risk profile because it is highly dependent on a few key individuals.

5. Other risks

In addition to the abovementioned risks, Immunicum is exposed to the following risks:

Third Party risk: Immunicum's future earnings will depend on alliances with pharmaceutical and biotechnology companies for a portion of the products in its pipeline. Failure by Immunicum to enter into agreements for the licensing of products, sales of intellectual property rights, or similar transactions, could have an adverse effect on the Company's business and financial position.

Exchange Rate Risk: Immunicum's costs and expenses are largely denominated in Swedish Krona (SEK) while a significant proportion of the Company's revenue is expected to be generated in US dollars, Euros and other currencies. A depreciation in these currencies against the Swedish Krona may result in lower than anticipated revenues of profits.

The Company will be exposed to foreign exchange risks between the Swedish Krona and US dollar on an ongoing basis and, accordingly, it will have to continuously monitor this risk. Any change in the ability to convert US dollars to Swedish Krona may have an adverse effect on the financial position of the Company from time to time.

Litigation Risk: The Company may in the ordinary course of business become involved in litigation and disputes, for example with service providers, customers or third parties infringing the Company's intellectual property rights. Any such litigation or dispute could involve significant economic costs and damage to relationships with contractors, customers or other stakeholders. Such outcomes may have an adverse impact on the Company's business, reputation, and financial performance.

Financial Analysis

1. Financial Result

- Immunicum's operating loss increased by 21.9% year-on-year from SEK 80.3 million in FY2017 to SEK 97.9 million in FY2018. This increase was primarily due to an increase in R&D expenses from SEK 58 million in FY 2017 to SEK 71 million in FY 2018, reflecting Immunicum's increased clinical trial spends on Ilixadencel as the treatment progressed into Phase II clinical trials.

2. Funding & Cash Reserves

- Immunicum raised SEK 351 million through a Directed & Rights Issue with strong institutional investors.
- The Company had a Cash and Cash Equivalents balance of SEK 443.8 million on 31 December 2018.
- Although, we believe that Immunicum is adequately capitalized to fund clinical trials and development research till 2021, the company will have to raise additional capital in case it is unable to strike a deal with a suitable pharmaceutical company.

Valuation

The equity Value of Immunicum AB stands between **SEK 1.31 billion and SEK 1.60 billion.**

The fair price per share for Immunicum AB stands between **SEK 14.2 and SEK 17.4.**

Important information on Arrowhead methodology

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent, depending on the sub-sectors in which the research is conducted. But all Arrowhead due diligence and valuation report possess an underlying set of common principles and a generally common quantitative process.

With Arrowhead commercial and technical due diligence, Arrowhead researches the fundamentals, assets and liabilities of a company, and builds estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance such as price/earnings ratios, indicated as applicable, are mainly for reference. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

We have presented the rNPV, NPV and Comparable Company Analysis. The fair value bracket is built on the basis of these three methods.

Arrowhead BID Fair Market Value Bracket

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analyses such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a valuation tool.

In principle, an investor comfortable with the high brackets of our key variable analysis will align with the high bracket in the Arrowhead Fair Value Bracket, and, likewise, in terms of low estimates. The investor will also note the company intangibles to analyze the strengths and weaknesses, and other essential company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in investor's own analysis.

The bracket should be taken as a tool by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that while on the one hand global capital markets contain inefficiencies, especially in terms of information, on the other, corporations and their commercial and technical positions evolve rapidly. This present edition of the Arrowhead valuation is for a short to medium-term alignment analysis (one to twelve months).

Estimation of Final Equity Value

The fair value of Immunicum AB's equity has been calculated using three approaches – Comparable Company Analysis, rNPV Analysis, and NPV Analysis. The three approaches have been given equal weights of 33.3% each and the results have been summarized in the table below:

Equity Value

Valuation Approach	Weight	Value (SEK million)
Value from rNPV Analysis*	33.3%	1,496
Value from NPV Analysis*	33.3%	1,779
Value from Comparable Company Analysis~	33.3%	1,096
Weighted Average		**1,457**

**As on 10th July 2019*
~As on 10th July 2019

Share Price Range

	Variance	Equity Value (SEK million)	Equity Value (SEK / Share)
Downside Case	-10.0%	1,311	14.2
Base Case	0.0%	**1,457**	**15.8**
Upside Case	10.0%	1,603	17.4

Following is the detailed methodology of the three valuation approaches:

1. Comparable Company Analysis

Comparable Company Analysis method operates under the assumption that similar companies will have similar valuation multiples, such as EV/R&D. We have shortlisted companies similar in business with AbbVie Inc based on parameters such as market size, drug pipeline, etc.

A list of available statistics for the companies was compiled, and the EV/R&D multiple was calculated for each of the comparable companies. Since most of the data was not normalized, we have left outliers in our calculations. The weighted average of the resulting multiples was then calculated and used as a benchmark for valuing Immunicum AB.

The weights allocated to the comparable companies were based on the degree of their business match with the subject company. The results have been tabulated below.

Listed Comparables Analysis

Relative Valuation based on:	Weights	Multiple	Implied Enterprise Value (SEK million)	Implied Equity Value (SEK million)	Implied Share Price (SEK)
EV / R&D Expense	100.0%	9.21	653	1,096	11.9
	100%			**1,096**	**11.9**

As on 10th July 2019

Listed Comparables Analysis

Stock Exchange	Ticker	Company Name	EV / R&D Expense
NASDAQ Stockholm	IMMU	Immunicum	7.6
NASDAQ Stockholm	CANTA	Cantargia AB	15.7
Nasdaq Stock Market	GRTS	Gritstone Oncology Inc	6.7
Nasdaq Stock Market	INO	Inovio Pharmaceuticals Inc	2.8
Deutsche Boerse	MDG1	Medigene AG	8.7
Nasdaq Stock Market	NTGN	Neon Therapeutics Inc	-
Nasdaq Stock Market	PIRS	Pieris Pharmaceuticals Inc	3.4
Nasdaq Stock Market	THOR	Synthorx Inc	17.9
Median			7.7
Mean without outliers			9.2
Weighted mean without outliers			**9.2**

Market data as on 10th July 2019
P&L numbers are for FY2018
Balance Sheet numbers as on 31st Dec 2018

2. rNPV Analysis

- **Valuation Methodology:** The Arrowhead fair valuation for Immunicum AB is based on the rNPV analysis of the six different indications of Ilixadencel.
- **Time Horizon:** The time period used for valuation is 15 years (2019P – 2033P). We believe Ilixadencel is the only revenue generator for the Company in the near future. We have assumed a time period till 2033 to account for the impact on market share of Ilixadencel after its patent expiry in 2031, which will significantly impact the Company's revenue.
- **Terminal Value:** We have used a terminal growth of 2% to calculate the terminal value.
- **Prudential Nature of Valuation:** This Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it is based on the Company's key treatment, Ilixadencel and excludes the value of other treatments which are in pre-clinical testing phase.

The discount rate for the rNPV Analysis has been assumed to be 9%, based on empirical market data. Ilixadencel is expected to be introduced in the market in 2025 for its first and most advanced indication, RCC. The treatment will subsequently be introduced for the other five indications in the following two

years, the last being in 2027. The following tables show cash flows from the different indications up till 2027. Please refer our model for cash flow projections beyond 2027.

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Kidney Carcincoma Indication (RCC)										
Clinical Phase of Ilixadencel for RCC		Phase II	Phase II	Phase III	Phase III	Phase III	Registration	Introduced		
Royalty Revenue from Ilixadencel for RCC Indication		-	-	-	-	-	-	217,555	319,806	431,738
Upfront Payment		-	-	189,400	-	-	-	-	-	-
Milestone Fee		-	-	-	-	-	94,700	-	-	-
Research & Development Expenses on RCC Indication		25,000	25,000	40,000	-	-	-	-	-	-
Net Cash Flow from RCC		(25,000)	(25,000)	149,400	-	-	94,700	217,555	319,806	431,738
Risk Adjusted Cash Flow from RCC		(25,000)	(25,000)	34,511	-	-	12,775	25,358	37,276	50,322
PV of Risk Adjusted Cash Flows		(23,994)	(22,007)	27,872	-	-	7,965	14,504	19,561	24,227
rNPV of RCC	**344,433**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Liver Carcincoma Indication (HCC)										
Clinical Phase of Ilixadencel for HCC		Phase II	Phase II	Phase III	Phase III	Phase III	Phase III	Phase III	Registration	Introduced
Royalty Revenue from Ilixadencel for HCC Indication		-	-	-	-	-	-	-	-	53,301
Upfront Payment		-	-	94,700	-	-	-	-	-	-
Milestone Fee		-	-	-	-	-	-	-	94,700	-
Research & Development Expenses on HCC Indication		7,000	7,000	15,000	-	-	-	-	-	-
Net Cash Flow from HCC		(7,000)	(7,000)	79,700	-	-	-	-	94,700	53,301
Risk Adjusted Cash Flow from HCC		(7,000)	(7,000)	18,411	-	-	-	-	12,775	6,213
PV of Risk Adjusted Cash Flows		(6,718)	(6,162)	14,869	-	-	-	-	6,704	2,991
rNPV of HCC	**72,983**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Non-Small Cell Lung Carcincoma Indication (NSCLC)										
Clinical Phase of Ilixadencel for NSCLC		Phase I	Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for NSCLC Indication		-	-	-	-	-	-	-	3,269,126	8,954,562
Upfront Payment		-	-	284,100	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on NSCLC Indication		10,000	20,000	25,000	-	-	-	-	-	-
Net Cash Flow from NSCLC		(10,000)	(20,000)	259,100	94,700	-	-	94,700	3,269,126	8,954,562
Risk Adjusted Cash Flow from NSCLC		(10,000)	(20,000)	39,642	3,347	-	-	1,955	58,299	159,689
PV of Risk Adjusted Cash Flows		(9,598)	(17,606)	32,016	2,480	-	-	1,118	30,594	76,880
rNPV of NSCLC	**757,347**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastrointestinal Stromal Tumor Indication (GIST)										
Clinical Phase of Ilixadencel for GIST		Phase I	Phase II	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GIST Indication		-	-	-	-	-	-	-	95,180	139,915
Upfront Payment		-	-	94,700	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on GIST Indication		7,000	15,000	15,000	-	-	-	-	-	-
Net Cash Flow from GIST		(7,000)	(15,000)	79,700	94,700	-	-	94,700	95,180	139,915
Risk Adjusted Cash Flow from GIST		(7,000)	(2,295)	12,194	3,347	-	-	1,955	1,697	2,495
PV of Risk Adjusted Cash Flows		(6,718)	(2,020)	9,848	2,480	-	-	1,118	891	1,201
rNPV of GIST	**25,193**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Head & Neck Carcinoma Indication (HNSCC)										
Clinical Phase of Ilixadencel for HNSCC		Phase I	Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for HNSCC Indication		-	-	-	-	-	-	-	95,180	139,915
Upfront Payment		-	-	94,700	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on HNSCC Indication		10,000	10,000	15,000	-	-	-	-	-	-
Net Cash Flow from HNSCC		(10,000)	(10,000)	79,700	94,700	-	-	94,700	95,180	139,915
Risk Adjusted Cash Flow from HNSCC		(10,000)	(10,000)	12,194	3,347	-	-	1,955	1,697	2,495
PV of Risk Adjusted Cash Flows		(9,598)	(8,803)	9,848	2,480	-	-	1,118	891	1,201
rNPV of HNSCC	**15,531**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastric Adenocarcinoma Indication (GA)										
Clinical Phase of Ilixadencel for GA		Phase I	Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GA Indication		-	-	-	-	-	-	-	222,087	326,468
Upfront Payment		-	-	189,400	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on GA Indication		10,000	10,000	15,000	-	-	-	-	-	-
Net Cash Flow from GA		(10,000)	(10,000)	174,400	94,700	-	-	94,700	222,087	326,468
Risk Adjusted Cash Flow from GA		(10,000)	(10,000)	26,683	3,347	-	-	1,955	3,961	5,822
PV of Risk Adjusted Cash Flows		(9,598)	(8,803)	21,550	2,480	-	-	1,118	2,078	2,803
rNPV of GA	**54,547**									

Equity Value from rNPV Analysis

Valuation Approach	Value (SEK millions)
Value from rNPV Analysis - RCC	344
Value from rNPV Analysis - HCC	73
Value from rNPV Analysis - NSCLC	757
Value from rNPV Analysis - GIST	25
Value from rNPV Analysis - HNSCC	16
Value from rNPV Analysis - GA	55
Less: Unallocated Costs	(218)
Add: Cash	444
Equity Value (SEK million)	**1,496**

**As on 10th July 2019*

3. NPV Analysis

- **Valuation Methodology:** The Arrowhead fair valuation for Immunicum AB is based on the NPV analysis of the six different indications of Ilixadencel.
- **Time Horizon:** The time period used for valuation is 15 years (2019P – 2033P). We believe Ilixadencel is the only revenue generator for the Company in the near future. We have assumed a time period till 2033 to account for the impact on market share of Ilixadencel after its patent expiry in 2031, which will significantly impact the Company's revenue.
- **Terminal Value:** We have used a terminal growth of 2% to calculate the terminal value.
- **Prudential Nature of Valuation:** This Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it is based on the Company's key treatment, Ilixadencel and excludes the value of other treatments which are in pre-clinical testing phase.

We have assumed discount rates of 35% and 30% for Phase I and Phase II trial stages of the indications. We have assumed a discount rate of 32% for the NSCLC indication. These discount rates have been assumed based on empirical market data. Ilixadencel is expected to be introduced in the market in 2025 for its first and most advanced indication, RCC. The treatment will subsequently be introduced for the other five indications in the following two years, the last being in 2027. The following tables show cash flows from the different indications up till 2027. Please refer our model for cash flow projections beyond 2027.

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Kidney Carcincoma Indication (RCC)										
Clinical Phase of Ilixadencel for RCC		Phase II	Phase II	Phase III	Phase III	Phase III	Registration	Introduced		
Royalty Revenue from Ilixadencel for RCC Indication		-	-	-	-	-	-	217,555	319,806	431,738
Upfront Payment		-	-	189,400	-	-	-	-	-	-
Milestone Fee		-	-	-	-	-	94,700	-	-	-
Research & Development Expenses on RCC Indication		25,000	25,000	40,000	-	-	-	-	-	-
Net Cash Flow from RCC		(25,000)	(25,000)	149,400	-	-	94,700	217,555	319,806	431,738
PV of Cash Flows		(22,061)	(16,958)	77,953	-	-	22,475	39,716	44,910	46,637
NPV of RCC	**384,826**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Liver Carcincoma Indication (HCC)										
Clinical Phase of Ilixadencel for HCC		Phase II	Phase II	Phase III	Phase III	Phase III	Phase III	Phase III	Registration	Introduced
Royalty Revenue from Ilixadencel for HCC Indication		-	-	-	-	-	-	-	-	53,301
Upfront Payment		-	-	94,700	-	-	-	-	-	-
Milestone Fee		-	-	-	-	-	-	-	94,700	-
Research & Development Expenses on HCC Indication		7,000	7,000	15,000	-	-	-	-	-	-
Net Cash Flow from HCC		(7,000)	(7,000)	79,700	-	-	-	-	94,700	53,301
PV of Cash Flows		(6,177)	(4,748)	41,585	-	-	-	-	13,299	5,758
NPV of HCC	**85,518**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Non-Small Cell Lung Carcincoma Indication (NSCLC)										
Clinical Phase of Ilixadencel for NSCLC		Phase I	Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for NSCLC Indication		-	-	-	-	-	-	-	326,913	895,456
Upfront Payment		-	-	284,100	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on NSCLC Indication		10,000	20,000	25,000	-	-	-	-	-	-
Net Cash Flow from NSCLC		(10,000)	(20,000)	259,100	94,700	-	-	94,700	326,913	895,456
PV of Cash Flows		(8,760)	(13,263)	130,170	36,043	-	-	15,659	40,952	84,979
NPV of NSCLC	**533,333**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastrointestinal Stromal Tumor Indication (GIST)										
Clinical Phase of Ilixadencel for GIST		Phase I	Phase II	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GIST Indication		-	-	-	-	-	-	-	95,180	139,915
Upfront Payment		-	-	94,700	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on GIST Indication		7,000	15,000	15,000	-	-	-	-	-	-
Net Cash Flow from GIST		(7,000)	(15,000)	79,700	94,700	-	-	94,700	95,180	139,915
PV of Cash Flows		(6,067)	(9,622)	37,871	33,332	-	-	13,536	10,078	10,974
NPV of GIST	**137,473**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Head & Neck Carcinoma Indication (HNSCC)										
Clinical Phase of Ilixadencel for HNSCC		Phase I	Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for HNSCC Indication		-	-	-	-	-	-	-	95,180	139,915
Upfront Payment		-	-	94,700	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on HNSCC Indication		10,000	10,000	15,000	-	-	-	-	-	-
Net Cash Flow from HNSCC		(10,000)	(10,000)	79,700	94,700	-	-	94,700	95,180	139,915
PV of Cash Flows		(8,667)	(6,415)	37,871	33,332	-	-	13,536	10,078	10,974
NPV of HNSCC	**138,080**									

All figures are in SEK thousands		2019P	2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastric Adenocarcinoma Indication (GA)										
Clinical Phase of Ilixadencel for GA		Phase I	Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GA Indication		-	-	-	-	-	-	-	222,087	326,468
Upfront Payment		-	-	189,400	-	-	-	-	-	-
Milestone Fee		-	-	-	94,700	-	-	94,700	-	-
Research & Development Expenses on GA Indication		10,000	10,000	15,000	-	-	-	-	-	-
Net Cash Flow from GA		(10,000)	(10,000)	174,400	94,700	-	-	94,700	222,087	326,468
PV of Cash Flows		(8,667)	(6,415)	82,869	33,332	-	-	13,536	23,515	25,605
NPV of GA	**274,309**									

Equity Value from NPV Analysis

Valuation Approach	Value (SEK millions)
Value from NPV Analysis - RCC	385
Value from NPV Analysis - HCC	86
Value from NPV Analysis - NSCLC	533
Value from NPV Analysis - GIST	137
Value from NPV Analysis - HNSCC	138
Value from NPV Analysis - GA	274
Less: Unallocated Costs	(218)
Add: Cash	444
Equity Value (SEK million)	**1,779**

**As on 10th July 2019*

Analyst Certifications

I, Nishaank Mehta, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject company.

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Glossary

IMMU	Immunicum AB
RCC	Renal Cell Carcinoma
HCC	Hepatocellular Carcinoma
NSCLC	Non-Small Cell Lung Carcinoma
GIST	Gastrointestinal Tumors
HNSCC	Head and Neck Squamous Cell Carcinoma
GA	Gastric Adenocarcinoma
TKI	Tyrosine Kinase Inhibitors
CPI	Checkpoint Inhibitors
CAR T Cells	Chimeric Antigen Receptors T Cells
MERECA	Metastatic Renal Cell Cancer
NK Cells	Natural Killer Cells
SAE	Serious Adverse Effect
IND	Investigational New Drug
CMC	Chemistry, Manufacturing & Control
ROA	Return on Assets
DCF	Discounted Cash Flow
WACC	weighted Average Cost of Capital
FCFF	Free Cash Flows to Firm

[i] *Bloomberg as on July-11-2019*

[ii] *30 Day Avg Volume calculated using Bloomberg data as on July-11-2019*