Due Diligence and Valuation Report

Arrowhead code:	69-08-05
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Fair share value bracket:	SEK 12.21-SEK 14.92
Share Price (29th May):	SEK 9.95

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Company:	Immunicum AB
Ticker:	OMX: IMMU
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Website:	https://www.immunicum.se

Market Data[i]

52-Week Range:	SEK 5.45 – SEK 16.44
Average Daily Volume:	502,456[ii]
Market Cap. on date:	917.9 million (mn)

Fiscal Year (FY) January 1 – December 31

Immunicum AB ("Immunicum" or "the Company") is a pre-revenue 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 SEK 12.21 to SEK 14.92.

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

Ilixadencel does not require patient-specific adaptation since it is based on the allogeneic DC technology. This allows it to be manufactured on a large scale, making it a cheaper and much faster treatment option. Ilixadencel is unlike most other immune primers and cell-based cancer vaccines currently on the market. Most cell-based cancer vaccines are custom-created using patient-specific cells and can, therefore, not be produced on a large scale. Their inviability for large-scale production makes cell-based vaccines an expensive and dilatory option for cancer treat-

-ment. Immune primers are more readily available since they are off-the-shelf treatments. However, most immune primers have a limited mechanism of action and are, therefore, comparatively less beneficial for patients.

COVID-19 Impact on the operations

The company has not faced any major impact of the pandemic on its operations and the ILIAD study continues in the U.S. as planned. However, the risk of a delay in the recruitment of patients in the ongoing ILIAD trial due to non-availability of research centers could potentially delay the research program and collection of study results. Still, the company has shipped sufficient stock of Ilixadencel to conduct Phase 1b of the ILIAD study.

The ongoing pandemic may restrict the company to access the capital market and raise funds for research activities.

Encouraging Topline results from Phase II MERECA Trial support continued clinical development of Ilixadencel

Immunicum is conducting Metastatic Renal Cell Carcinoma ("MERECA") study to investigate the clinical efficacy of Ilixadencel in combination with Pfizer's TKI, sutent (sunitinib), in newly diagnosed high- and intermediate-risk Metastatic Renal Cell Cancer ("mRCC") patients.

The Company released topline results of the MERECA study in August 2019, after 18 months of commencement of the study, and released complete analysis of the topline data in September 2019. We believe that the Ilixadencel+sutent trial group's 11% complete tumor response rate compared to the sutent-only group's 4% is a significant milestone for Immunicum. The Ilixadencel+sutent group's higher survival rate over the monotherapy group as of July 2019 was another significant positive for the company, as was the combination group's longer median duration of response. Another source of encouragement was the combination group achieving a similar 18-month survival rate (which was one of the two primary outcome measures selected for the study) vis-à-vis the monotherapy group.

We believe that, overall, the results of the MERECA study were encouraging despite some disappointments, such as the combination group's lower Objective Response Rate ("ORR") compared to the monotherapy group.

Median overall survival ("OS"), which was the other primary outcome measure selected for the study, could not be achieved in the 18-month period because more than 60% of the patients (including the median patient) survived in both groups. The Company has been following many of these patients for more than the 18-month study period and many of these patients have died since the results were released.

The company announced the updated survival results in February 2019. Survival as of December 2019 was 54% in the combination group, compared with 37% of patients in the monotherapy group. The confirmed Overall Response for the combination group was 42.2%. For the monotherapy group, it was 24%.

Additionally, as a testimony to the relevance of the data, the company's abstract covering data from the trial was accepted for oral presentation at the world-leading ASCO-SITC Clinical Immuno-Oncology Symposium.

Regenerative Medicine Advanced Therapy (RMAT) designation from the Food and Drug Administration (FDA) for Ilixadencel in Kidney Cancer

The company has received RMAT designation from FDA for Ilixadencel. This decision was based on the positive results received from the Phase II MERECA trial. Under RMAT designation, the company will receive guidance from FDA related to key drug development decisions and accelerate the research program and approval process.

We believe that the RMAT designation will help the company get more time to design the study structure and plan and approach potential companies for collaborations and raise funds for research activities. The RMAT designation improves the possibility of timely launch of the immunotherapy in the market.

Losses to continue deepening due to higher R&D expenses as preparation for Ilixadencel's commercial production intensify

Encouraging results from the MERECA trial have inspired Immunicum to step up efforts towards bringing Ilixadencel into commercial production. The Company is collaborating with Hitachi Chemical Advanced Therapeutics Solutions ("HCATS") for commercial-scale manufacturing and has been making large Chemistry, Manufacturing, and Control ("CMC") investments at HCATS to ensure that a commercial production process is in place at the earliest. Pursuant to this, Immunicum spent 39.6% more on R&D in H1'19 compared to H2'18 and we expect the Company to maintain this level of R&D spending throughout 2019 and 2020. We expect Immunicum to increase its R&D expenditure significantly in 2021 as it starts preparing for the next 'pivotal' trial of Ilixandencel. This high R&D spending will deepen Immunicum's losses. The Company may require a large Pharmaceutical company to provide the capital to support these initiatives. Any delay or failure in finding such a strategic partner is a key risk for the Company.

Advancement to the next dosage group level in Phase Ib/II ILIAD Combination Trial is a key event in Ilixadencel's lifecycle

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

In October 2019, the DEC confirmed that Ilixadencel showed a favorable safety profile with no serious adverse events in combination with Keytruda in three patients dosed with two intratumoral injections of three mn cells. Based on these data, Immunicum has decided to continue the trial to test the next dosage level which will be a key event in the development of Ilixadencel. The study results from the dosing are expected in Q2 2020.

The company plans to conduct Phase II by grouping up the patients as per their category (Head and Neck cancer, Non-Small Cell Lung Cancer and Gastric Cancer) simultaneously where the company will be using the combination of illixadencel and checkpoint inhibitor therapy.

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 for all six indications of Ilixadencel by the end of 2021. All clinical development costs will be borne by the partner and Immunicum will receive an upfront payment of $100 mn with subsequent milestone payments and a 20% 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.

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1. 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.

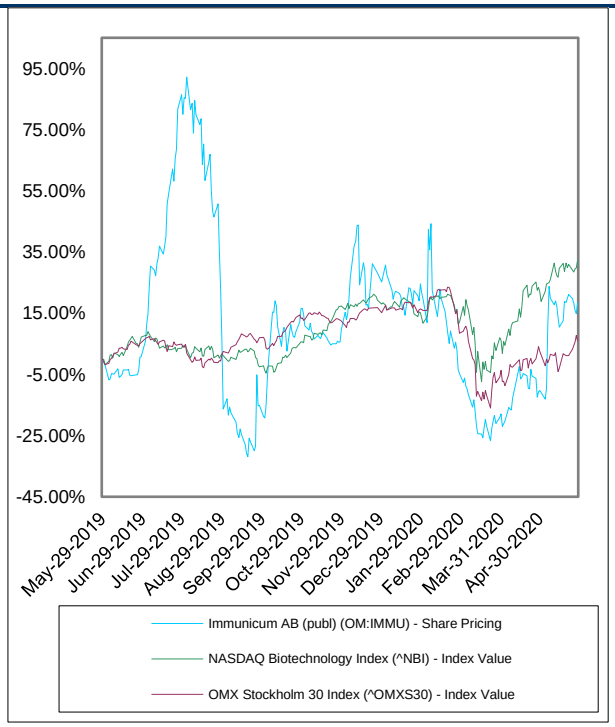
Listed on the Nasdaq Stockholm in 2018

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 736 mn.

Outperformed the OMX Stockholm 30 index and most key competitors in the last 52 weeks

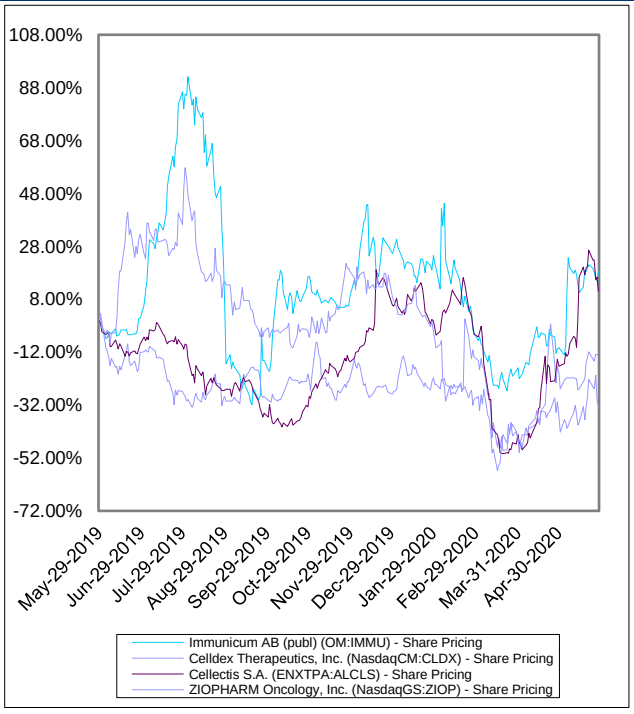
Immunicum's stock underperformed the Nasdaq Biotechnology index and significantly outperformed the OMX Stockholm 30 index in the 52 weeks to May 29, 2020. Over this period, Immunicum's stock generated a return of 18.5%, while the OMX Stockholm 30 and Nasdaq Biotechnology Indices generated returns of 5.91% and 32.2%, respectively. Immunicum outperformed all of its closest listed comparable companies, viz., Celldex Therapeutics, Cellectis SA, and Ziopharm Oncology Inc.

Immunicum 52-week stock performance vs major indices



Source: Capital IQ

Immunicum 52-week stock performance vs competitors



Source: Capital IQ

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.

2. 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 six 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

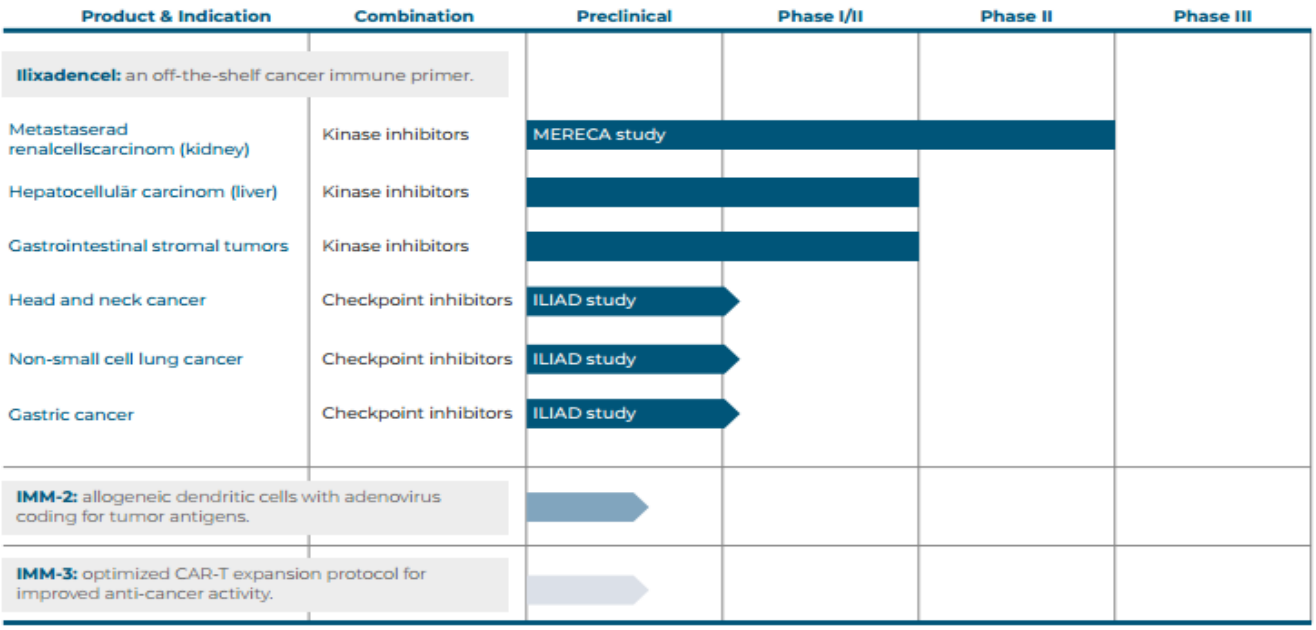
Ilixadencel is being developed as a unique cancer immune primer that eliminates the need to create personalized treatments by taking advantage of the patients' tumor-specific antigens. The therapy is based on Immunicum's patented pro-inflammatory allogeneic Dendritic Cells ("DC") technology. This technology 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)	Encouraging topline results were achieved in Phase II MERECA trial in August 2019. Ilixadencel administered along with sutent (sunitinib) generated complete tumor responses in 11% of the patients compared to 4% of the patients who were administered sutent alone. The combination also generated higher survival rate compared to sutent alone and had a far longer median duration of response than sutent alone. The combination group and the monotherapy group had 18-month survival rates of 66% and 63%, respectively.

		The survival rate as per the December 2019 study result was 54% for the combination group against 37% for the monotherapy group. The combination group had a higher confirmed Objective Response Rate of 42.2% against the monotherapy group's 24%. The company received RMAT designation for this indication from U.S. FDA in the month of May 2020.
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. Previously, in September 2017, only 1 out of 18 patients witnessed adverse events following treatment.
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)	In October 2019, Dose Escalation Committee (DEC) confirmed that Ilixadencel showed a favorable safety profile with no serious adverse events in combination with Keytruda in three patients dosed with two intratumoral injections of three mn cells. Based on these data, Immunicum has decided to continue the trial to test the next dosage level. Topline results for Phase Ib/II study are expected in 2020.
Non-Small Cell Lung Cancer (NSCLC)	Phase Ib/II (ILIAD)	
Gastric Cancer (GA)	Phase Ib/II (ILIAD)	



How Does It Work?

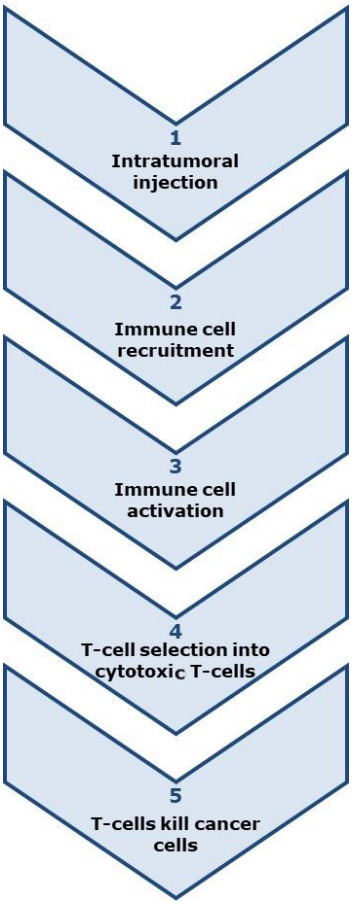
1. Ilixadencel cells are injected directly into the tumor. These cells survive for 48 to 72 hours after being injected and release immuno-stimulating factors, including chemokines and cytokines.

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 has significant advantages over cell-based cancer vaccines, as mentioned below:

Ilixadencel	Cell-based Cancer Vaccines
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.

Immuno-oncology market and Immunicum's positioning

The Immune therapies market is expected to grow at an annual growth rate of 23.9% and reach USD 75.8 billion (bn) by 2022 as cancer is the second leading cause of death globally. In 2018, around 9.6 mn people died due to cancer.

Nowadays, Immuno-oncology has evolved to use the immune system of the body to fight cancer. This is the key area Immunicum is focusing upon, along with many other players.

Immuno-oncology covers two categories of drugs: 1) Immune stimulation 2) Anti-immunosuppresion

Immunicum is currently focusing on immune primer, which is a part of the immune stimulation. Immune primers are used in intratumoral administration and utilize the patient's own tumor as the neoantigen source in situ. Immunicum is currently operating in this category with Ilixadencel and immune enhancers such as Toll Like Receptors (TLR)- and STING-ligands.

Immunicum's key product, Ilixadencel, is in the clinical stages for trials as treatment for kidney cancer. Also, the company is backing it by using it in combination with other drugs to activate the immune system. The company is conducting trials with Ilixadencel for other cancer treatments such as liver cancer, gastrointestinal cancer, head and neck cancer, non-small-cell lung cancer and gastric cancer.

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, Liver Carcinoma, and Gastrointestinal Stromal Tumors. It is currently conducting a Phase II study (MERECA) in RCC 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").

Over 90 of the patients treated with Ilixadencel in clinical studies till date have shown encouraging early efficacy results for most indications, as can be seen in the table below. The number of serious adverse events ("SAE") in the Company's studies has been very low so far and the number of the adverse events ("AE") has been low. The AE observed has mainly been low-grade 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)	• Mixed topline results were achieved in Phase II MERECA trial in August 2019, 18 months into the trial. However, deeper analysis of trial data revealed several encouraging outcomes. • Survival as of December 2019 was 54% (30 out of 56) for the patients treated with Ilixadencel+sutent compared with 37% (11 out of 30) for the patients treated with just sutent (sunitinb). • The Ilixadencel+sutent study group had an ORR of 42.2% (19 out of 45) against the sutent-only group's 24% (6 out of 25), as of December 2019. • Ilixadencel administered along with sunitinib generated complete tumor responses in 11% of the patients (5 out of 45) compared to 4% of the patients (1 out of 25) who were administered sutent alone, as of July 2019. • The Ilixadencel+sutent study group had a median Duration of Response of 7.1 months versus the sutent-only group's 2.9 months, as of July 2019. • Patients who were given sutent alone achieved an 18-month survival rate of 66% versus 63% for patients who were given sutent in combination with Ilixadencel, as of July 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. • Immunicum announced positive topline results from the trial in June 2019. The trial showed that Ilixadencel had a favorable safety profile, confirming similar data from past studies, in combination with several TKIs. • The secondary clinical trial endpoints also provided initial signals of clinical benefit in two patients that showed partial response to the treatment.
Head and Neck Cancer (HNSCC) & Non-Small Cell Lung Cancer (NSCLC) & Gastric Cancer (GA)	Checkpoint Inhibitors (CPI)	Phase Ib/II (ILIAD)	• In October 2019, DEC confirmed that Ilixadencel showed a favorable safety profile with no serious adverse events in combination with Keytruda in three patients dosed with two intratumoral injections of three mn cells. Based on these data, Immunicum has decided to continue the trial to test the next dosage level. Topline results for Phase Ib/II study are expected in 2021. • In February 2019, the first patient was treated with a combination of Ilixadencel and Keytruda. • 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).

Encouraging Complete Topline Data Analysis Results for Phase II MERECA Trial

Ilixadencel is in Phase II testing for RCC and this is the most advanced trial stage that Ilixadencel is currently in for any indication. 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, which is the first-line treatment for RCC, in newly diagnosed Metastatic RCC ("mRCC") patients.

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. The study was to start with 88 patients, 58 of whom (i.e. combination group) were to be treated with Ilixadencel, followed by surgery to remove the tumor and treatment with Pfizer's sutent (sunitinib). The remaining 30 patients (monotherapy group) were to only undergo surgery and receive sutent. The trial eventually progressed with 86 patients (56 in the combination group and 30 in the monotherapy group) as two patients from the combination group were adjudged as screening failures. The number of surviving patients kept falling as the trial progressed, and 70 patients survived until the stage where sunitinib was to be administered. 45 of these patients were in the combination group and 25 in the monotherapy group.

Immunicum released complete topline data analysis results from the MERECA trial in September 2019. 5 out of the 45 patients given Ilixadencel in addition to sutent were found to have no evidence of RCC, whereas only 1 out of the 25 patients administered only sutent experienced this outcome. We believe that an implied complete tumor response rate of 11% with the use of Ilixadencel compared to only 4% without its use is a significant result for Immunicum. The Ilixadencel+sutent study group had a median duration of response of 7.1 months, compared to the sunitinib monotherapy group's 2.9 months.

The survival rate, as of February 2019, for the group treated with Ilixadencel+sutent was 54%, whereas the survival rate for the group treated with sutent was 37%. The confirmed ORR for the combination group, as of December 2019, was 42.2%, while that for the monotherapy group was 24%. The median OS could not be calculated as the data were not mature.

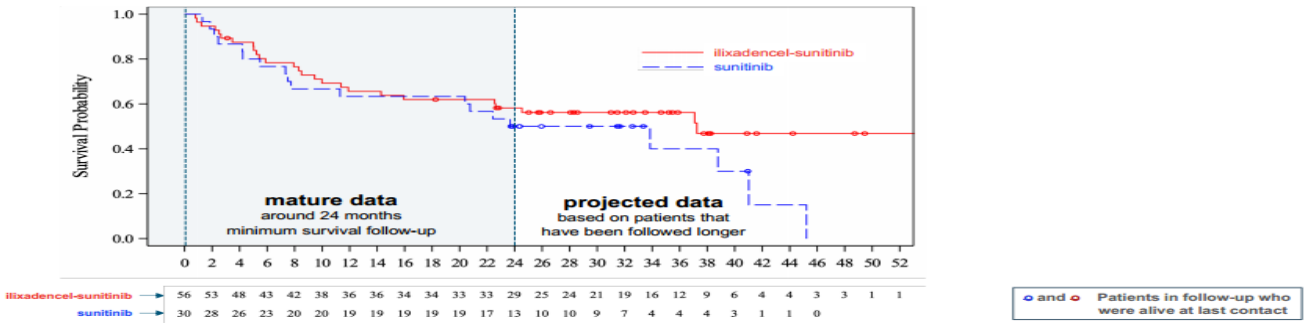
The updated results confirmed that better results were achieved in terms of survival, response rate and side-effects for the group which was treated with the combination of Ilixadencel and sunitinib. The latest set of results depicts that Ilixadencel is a valid option when used as a combination therapy.

The Company expects to release the set of the study results in mid-2020.

Previously, in 2014, the company presented the Phase I/II study data in twelve patients who were identified with Renal cell cancer. No serious consequences were noted following treatment. The median survival time for the patients who were treated with Ilixadencel, compared with the group which was treated with sutent, was 48 months.

Received RMAT Designation from U.S. FDA

The decision by the U.S. FDA to grant RMAT designation based on the results of the MERECA trial results is likely to help the company to receive direct guidance from the FDA on the development process and support accelerated approval. The RMAT designation is expected to help the company get more time to design the study structure and plan and approach potential companies for future collaborations to raise funds for their clinical activities. It is likely to benefit the company in terms of timely launch of the immunotherapy in the market.



R&D Costs to Remain High as Preparation for Commercial Production Accelerate After Topline MERECA Results

Encouraging results from the MERECA trial have inspired Immunicum to step up efforts towards bringing Ilixadencel into commercial production. The Company is collaborating with Hitachi Chemical Advanced Therapeutics Solutions ("HCATS") for commercial-scale manufacturing since the current manufacturer BioNTech does not have the capacity for large scale manufacturing. HCATS is a large global manufacturer with production facilities in the US, Europe, and Asia. Immunicum is making large Chemistry, Manufacturing, and Control ("CMC") investments at HCATS, to ensure that a commercial production process that complies with all regulatory requirements in the EU and the US is in place before Ilixadencel gets regulatory approval for commercialization.

The Company is also looking to fast-track the production preparations so that the samples used for the 'pivotal' trial come out of the same production process that will produce Ilixadencel for the market. Immunicum's R&D costs have increased substantially in recent months, primarily because of the commercial preparations being put in place for Ilixadencel. The company increased its R&D spending by 45.4% in FY 2019 compared with FY 2018 and Immunicum's R&D expenditure would stay the same during 2020 but may increase into 2021 dependent on progress with partnerships into pivotal studies.

Immunicum and BioNTech have been successful in producing Ilixadencel in a short time of 6 days, ensuring that the cells remain vital for a storage period of as long as even three years 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. Ilixadencel is now moving to an operationally critical juncture, where Immunicum and HCATS must ensure that the technology transfer is completed diligently, and the commercial production process maintains the efficiency and product efficacy as BioNTech. Ensuring that the transfer is completed successfully is another significant source of risk for the Company.

ILIAD Trial to Progress to Next Stage After Proving Favorable Safety Profile

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 is being conducted to test the safety and efficacy of Ilixadencel in combination with pembrolizumab, after which it will move into the Phase II part of the study in which it will test in combination with avelumab in Head and Neck Squamous Cell Carcinoma and Gastric & Gastroesophagael Junction Adenocarcinoma, and in combination with

pembrolizumab in Non-Small Cell Lung Cancer. Immunicum is responsible for the implementation of the study and will retain all commercial rights to Ilixadencel.

In October 2019, the DEC confirmed that Ilixadencel showed a favorable safety profile with no serious adverse events in combination with Keytruda in three patients dosed with two intratumoral injections of three mn cells. Based on these data, Immunicum has decided to continue the trial to test the next dosage level.

The dosing results are expected to be released in Q2 2020.

The timely shipment of Ilixadencel stock is expected to enable the trials to be conducted on time unless the clinical centers are not able to recruit patients for the trials and stand the risk of delay.

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.

We expect Immunicum 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.

Recently, the European Patent office decided to issue a new patent to Immunicum, which will be based on a method wherein the Ilixadencel will be polluted with adenovirus.

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 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.

3. Company Milestones

Company Milestones[iii]	
Year/ Period	**Event**
2002 - 2011	• Incorporated in the year 2002 • In 2009, Immunicum filed a new patent application (METHOD FOR PROLIFERATION OF ANTIGEN-SPECIFIC T CELLS) • In 2011, Received approval from Swedish Medical products Agency to initiate its first clinical trial • In 2011, Immunicum's patent EP 1 509 244 got validated in 11 countries
2012	• Immunicum submitted a new patent application EP12197687.2 to protect a process for mass production of INTUVAC and SUBCUVAC • Treated the first patient in a clinical phase I/II trial in metastasized RCC • Closed new share issue and secured 6.3 MSEK in new financing
2013	• Withdrew INTUVAC trademark application and filed trademark application for INTUVAX • Submitted trademark application for SUBCUVAX • Issued 2.6 mn shares for SEK 133 mn • Received grant of SEK 470,000 from the Innovation agency • Submitted application to the Medical Products Agency to initiate a clinical phase I/II trial in liver cancer and the application got approved by the authorities • First patient got the dose of the therapeutic cancer vaccine INTUVAX® • Patent application got approved by the authorities for the US region
2014	• Immunicum published positive results from CD-70 technology • Acquired patent for oncolytic therapy and further development of SUBCUVAX • Reported updated data from kidney cancer trials and liver cancer trials
2015	• Swedish medical authorities approved the company's application to commence Phase II clinical trial in patients with RCC with the therapeutic cancer vaccine INTUVAX in Sweden • Published updated data with Heptacellular carcinoma trials • Admitted first patient in the international phase II study • Reported improvement in the survival data of patients which are part of Phase I/II trials with kidney cancer • Filed an application with the Swedish Medical Products Agency to start a phase I/II study in GIST cancer with the company's therapeutic cancer immune primer INTUVAX® and later received an approval for the sale
2016	• Reported improvement in results from MERECA trials • Partnership with Accelovance for clinical development • US Food and Drug Administration (FDA) has cleared the Company's Investigational New Drug application (IND) for INTUVAX
2019 - 2020	• In August 2019, MERECA topline results published on kidney cancer trials • In 2020, Immunicum presented at ASCO-SITC Presentation

4. News

- **Appointment of interim Chief Financial Officer (CFO):** On May 13, 2020, the company appointed Peter Hein as an Interim CFO. Recruitment of a permanent CFO is still in process.

- **Received RMAT designation from FDA:** On May 06, 2020, the company announced that it has received RMAT designation from U.S. FDA. This designation was granted by FDA following the submission of MERECA trial results by the company. These results demonstrated the safety and efficacy of Ilixadencel.

- **Announced Q1 2020 Results:** On April 28, 2020, Immunicum announced the Q1 2020 results. The company reported an operating loss of SEK 33.9 mn in Q1 2020 compared with SEK 29.1 mn in Q1 2019. Net loss for Q1 2020 stood at SEK 31.7 mn compared with SEK 29.1 mn for Q1 2019. The company had cash and cash equivalents of SEK 263.4 mn on March 31, 2020.

- **Appointment of new Chief Medical Officer (CM0):** On March 30, 2020, the company announced that Peter Suenaert was to resume the role of CMO from May 01, 2020. Previously, he had left this role in Q3 2019 after the completion of the MERECA trial.

- **Resignation of CFO:** On March 02, 2020, the company announced that its CFO, Michaela Gertz, was to leave the company during the summer of her own will. The search for the new CFO was to start immediately once Michaela left.
- **FY 2019 results announced:** On February 18, 2020, Immunicum announced the annual results for FY 2019. The company reported an operating loss of SEK 132.3 mn in FY 2019 compared with SEK 97.8 mn in FY 2018. Net result for the year stood at SEK 134.0 mn compared with SEK 97.860 mn of the previous year. The company had cash and cash equivalents of SEK 296.8 mn as on December 31, 2019.

- **Presentation of data from MERECA trial at ASCO-SITC Clinical Immuno-Oncology Symposium**: On February 06, 2020, Immunicum announced that the company presented updated data from Phase II of MERECA trial of Ilixadencel in Kidney cancer at the ASCO-SITC Clinical Immuno-Oncology Symposium held on February 06, 2020 in Orlando, Florida.

- **Resignation of CEO**: On December 13, 2019, Immunicum announced the resignation of Carlos de Sousa as the Chief Executive Officer (CEO) of the company. The company appointed Alex Karlsson-Parra (Chief Scientific Officer) as the acting CEO.

- **Announced 9M 2019 results**: On November 06, 2019, Immunicum announced its 9M 2019 results. The company's operating expenses increased by 28.8% on a YoY basis to SEK 92.4 mn in 9M 2019 from SEK 71.8 mn in 9M 2018, with an increase in the R&D costs and the administration costs. The company reported a net loss of SEK 92.0 mn in 9M 2019, an increase of 28.4% on a YoY basis from SEK 71.6 mn in 9M 2018. The company ended 9M 2019 with a cash balance of SEK 334.0 mn.

- **Positive Preclinical Data on Ilixadencel in Combination with CTLA-4 Immune Checkpoint Inhibitor**: On October 21, 2019, Immunicum announced the results of a preclinical study examining Ilixadencel in combination with CTLA-4 Immune checkpoint inhibitor. The study results indicated that Ilixadencel in combination with CTLA-4 induces a stronger anti-tumor response in comparison with the well-known combination of PD-1 and CTLA-4.

- **Advancement to Next Dosage Group Level in Phase Ib/II ILIAD Combination Trial:** On October 01, 2019, Immunicum received confirmation from the DEC that Ilixadencel showed a favorable safety profile

with no serious adverse events in combination with Keytruda in three patients dosed with two intratumoral injections of three mn cells. Based on these data, Immunicum decided to continue the trial to test the next dosage level.

- **Encouraging Complete Topline Data Analysis Results from Phase II MERECA Trial:** On September 25, 2019, Immunicum announced encouraging complete topline data analysis results from Phase II MERECA trial to evaluate the therapeutic impact of combining Ilixadencel with sutent (sunitinib). The topline data on survival benefit in all patients showed that a higher percentage of Ilixadencel patients were alive as per data cut-off in July 2019. Among the patients with Complete Responses (CR) and Partial Responses (PR), the addition of Ilixadencel to sunitinib induced stronger and more durable tumor responses. These results indicated that Ilixadencel provided a systemic therapeutic benefit while maintaining a positive safety and tolerability profile.

- **Mixed Topline Results from Phase II MERECA Trial:** On August 29, 2019, Immunicum announced mixed topline results from Phase II MERECA trial to evaluate the therapeutic impact of combining Ilixadencel with sutent (sunitinib). The outcome of the study established Ilixadencel favorable safety profile and validated the continued clinical development of Ilixadencel as an immune primer in solid tumors. However, it raised concerns regarding Ilixadencel's efficacy as the Ilixadencel-sutent combination could not deliver positive results on the study's primary outcome measures.

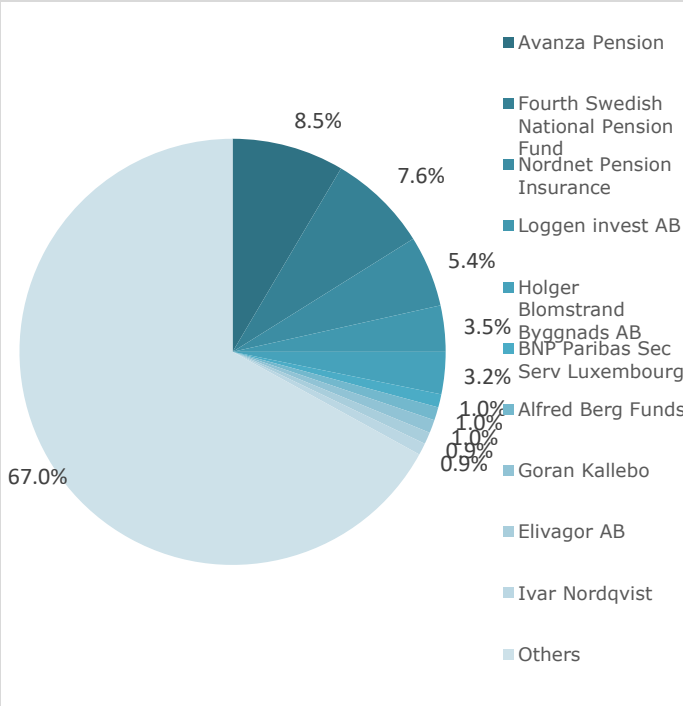
- **Positive Topline Results from Phase I/II Clinical Trials of Ilixadencel for the GIST Indication:** On June 12, 2019, Immunicum announced completion and positive topline results from the phase I/II trials for examining the safety and tolerability of Ilixadencel in combination with TKIs in six patients with GIST. The outcome of the GIST study supported 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:** On 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 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:** On 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.

5. Shareholding Structure

The company had a total of 92,257,531 outstanding shares as on March 31, 2020.



Source: Company Filings (As of March 31, 2020)

Equity Holder	No. of ordinary shares held	% share-holding
Avanza Pension	7,862,783	8.5 %
Fourth Swedish National Pension Fund	7,000,000	7.6 %
Nordnet Pension Insurance	4,931, 318	5.4 %
Loggen invest AB	3,200,000	3.5 %
Holger Blomstrand Byggnads AB	2,975,386	3.2 %
BNP Paribas Sec Serv Luxembourg	957,450	1.0%
Alfred Berg Funds	953,466	1.0 %
Goran Kallebo	931,863	1.0 %
Elivagor AB	875,000	0.9%
Ivar Nordqvist	843, 630	0.9 %
Others	54,186,612	67.0%
Total	**92,257,531**	**100%**

6. 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

7. Management

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

- Dr. Karlsson-Parra has been the Co-Founder and Chief Scientific Officer of Immunicum since 2008.
- Dr. Karlsson-Parra has over two decades of experience in transplantation immunology and has been the chairman of the Swedish Expert Group for Clinical Immunology. He has been awarded the Athena Prize, Swedish healthcare's most prestigious award for clinical research, in 2014.
- Dr. Karlsson-Parra has been 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.

Michaela Gertz
(Chief Financial Officer)

- Ms. Gertz is the Chief Financial Officer 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.
- She will leave the position of CFO during the second quarter.

Dr. Peter Suenaert
(Chief Medical Officer)

- Dr. Suenaert is the Chief Medical Officer 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.

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
(Chief Operating Officer)

- 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.

Peter Hein
(Interim Chief Financial Officer)

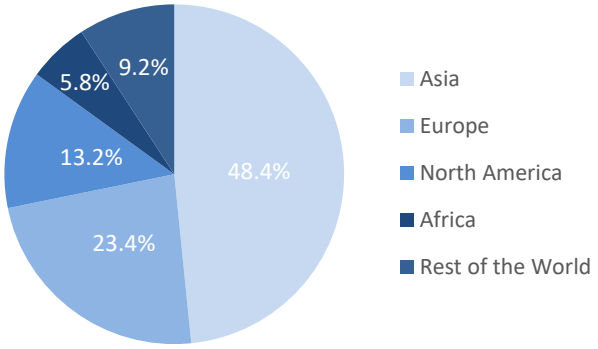
- Appointed interim CFO with effect from May 18, 2020.
- Prior to joining Immunicum, he served as CFO at Q-Med, Biolipox (Orexo) and Vice President and CFO at BioArctic AB
- He has also held the position of CFO and CEO at Granngården.
- He has also worked in companies like Eriksson and Swedish Match.

8. Industry Analysis

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

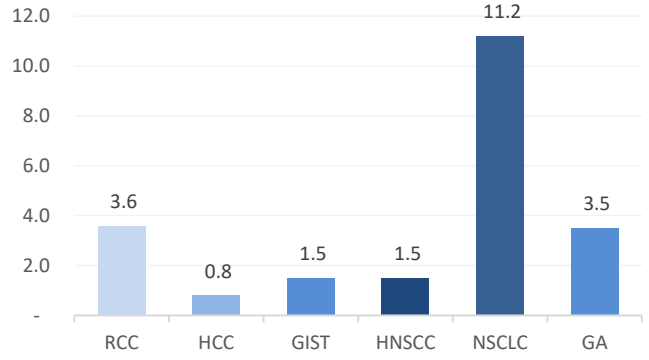
Estimated Incident Cases of Cancer in 2018



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

Global Market Size of Different Indications by 2020

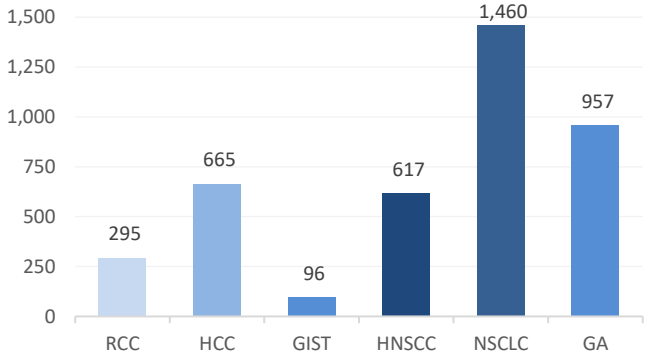
Market Size in $bn



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.

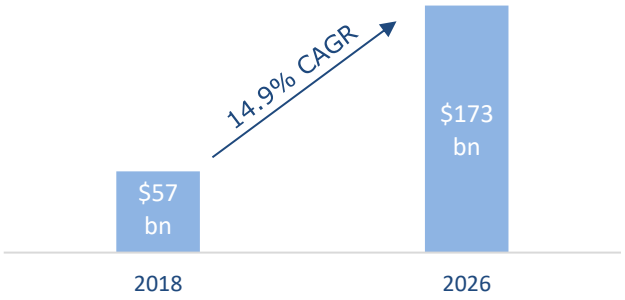
Immuno-Oncology – Fastest Growing Pharmaceutical Research Field

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 bn in 2018 to $172.7 bn 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 Bn 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 bn. 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]

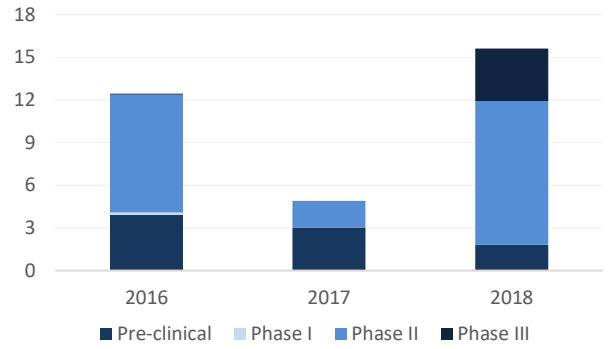
ii Coherent Market Insights
iii The Cancer Research Institute – Trends in the global immuno-oncology landscape

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 ($ bn)



Source: EvaluatePharma

- In 2015, Amgen entered into a strategic immunotherapy collaboration with Kite Pharma to develop and commercialize 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 bn.

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

The global cost of oncology therapeutics and supportive care drugs increased from $91 bn in 2012 to $113 bn 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 bn 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.

9. 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	Immunicum has no proven track record of developing a commercially successful treatment. Encouraging outcomes from the Phase II MERECA study have improved the Company's R&D risk profile. However, the Company may need to partner with a large pharmaceutical company to finance the next stage of development of Ilixadencel. Any delay or failure in arranging a partner is a noteworthy source of risk for the Company.
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, until 2031 with the potential of additional protection through 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 pre-revenue 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. The Company recently announced Complete Topline Data Analysis results from the Phase II MERECA study for Ilixadencel, which is its most promising drug at present. We believe that encouraging results from the MERECA study improve the Company's R&D risk profile. However, the Company may need to partner with a large pharmaceutical company to finance the next stage of development of Ilixadencel. Any delay or failure in arranging a partner is a notable source of risk for the Company.

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 and is heavily reliant on strategic partners for financing the upcoming stages of R&D.

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.

6. COVID-19 Impact on the business

The current global healthcare crisis has impacted the global healthcare system and other businesses.

There is a risk with respect to the recruitment of the patients for the ILIAD study as only a few sites are likely to be able to treat patients due to the pandemic. However, the company has already shipped sufficient stock of Ilixadencel to complete the ongoing study so that the study trials do not get affected.

COVID-19 could lead to a delay in the collection of follow-up survival data for the MERECA study which could further create a delay in the processing of trials and the timing of the launch of the drugs. The trial delays may affect the company's ability to raise funds on time.

10. Financial Analysis

1. Financial Results

- Immunicum's operating loss increased by 16.2% YoY to SEK 33.9 mn in Q1 2020. The increase was primarily due to a rise in selling, general and administrative (SG&A) expenses from SEK 6.1 mn in Q1 2019 to SEK 9.6 mn in Q1 2020, reflecting Immunicum's increased expenditure on business development, recruitment of the new CEO and other business activities.
- The company's net loss increased to SEK 31.7 mn in Q1 2020 from SEK 29.1 mn in Q1 2019 due to an increase in SG&A expenses but was offset with financial income of SEK 2.2 mn.
- The company's research and development (R&D) expenses as percentage of total expenses stood at 69.1% in Q1 2020 compared with 79.1% in Q1 2019, an increase of 1.2% on a YoY basis.

FY 2019 results

- Immunicum's operating loss has increased by 35.2% YoY from SEK 97.8 mn in FY 2018 to SEK 132.3 mn in FY 2019. This increase has been primarily due to rise in R&D expenses from SEK 70.9 mn in FY 2018 to SEK 103.1 mn in FY 2019, reflecting Immunicum's increased expenditure on development activities and ongoing clinical and preclinical trials.
- Losses have continued to be high in FY 2019, as the Company has continued spending more on R&D, especially on getting the Ilixadencel manufacturing process ready at HCATS. The company's net loss increased to SEK 134.0 mn in FY 2019 from SEK 97.8 mn in FY 2018 due to an increase in R&D expenditure and administrative expenses.
- The Company's R&D expenses as percentage of total expenses stood at 77.4% in 2019 compared with 72.4% in 2018, a sharp increase of 45.4% on a YoY basis. This increase has largely been due to pre- clinical and clinical activities conducted for cancer trials.

2. Funding & Cash Reserves

- The company had a cash and cash equivalents balance of SEK 263.4 mn on March 31, 2020.
- We believe that Immunicum is adequately capitalized to meet its routine R&D requirements and fund Ilixadencel's production process setup at HCATS until 2021. However, the Company may require additional capital to further accelerates the R&D schedule of Ilixadencel and its non-Ilixadencel projects.
- The Company hopes to bring in partners to support the next stages of Ilixadencel's R&D and raise non-dilutive capital (i.e. grants) for its non- Ilixadencel portfolio.

11. Valuation

The equity Value of Immunicum AB stands between **SEK 1.12 bn and SEK 1.37 bn.**

The fair price per share for Immunicum AB stands between SEK 12.21 and SEK 14.92.

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 following weights and the results have been summarized in the table below:

Equity Value

Valuation Approach	Weight	Value (SEK million)
Value from rNPV Analysis*	40.0%	891.3
Value from NPV Analysis*	40.0%	1,959.2
Value from Comparable Company Analysis~	20.0%	555.8
Weighted Average		**1,251.4**

Share Price Range

	Variance	Equity Value (SEK million)	Equity Value (SEK / Share)
Downside Case	-10.0%	1,126.2	12.21
Base Case	0.0%	**1,251.4**	**13.56**
Upside Case	10.0%	1,376.5	14.92

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 that are comparable to Immunicum, 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%	2.52	260	556	6.0
	100%			556	6.0

Listed Comparables Analysis

Financial year is from January - December

Stock Exchange	Ticker	Company Name	EV / R&D Expense Contribution
NASDAQ Stockholm	CANTA	Cantargia AB	17.5
Nasdaq Stock Market	GRTS	Gritstone Oncology Inc	1.8
Nasdaq Stock Market	INO	Inovio Pharmaceuticals Inc	24.2
Deutsche Boerse	MDG1	Medigene AG	3.7
Nasdaq Stock Market	NTGN	Neon Therapeutics Inc	-
Nasdaq Stock Market	PIRS	Pieris Pharmaceuticals Inc	2.1

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 14 years (2020P – 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		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Kidney Carcincoma Indication (RCC)									
Clinical Phase of Ilixadencel for RCC		Phase II	Phase III	Phase III	Registration	Introduced			
Royalty Revenue from Ilixadencel for RCC Indication		-	-	-	-	214,853	451,191	663,251	696,413
Upfront Payment		-	196,400	-	-	-	-	-	-
Milestone Fee		-	-	-	98,200	-	-	-	-
Research & Development Expenses on RCC Indication		35,000	60,000	-	-	-	-	-	-
Net Cash Flow from RCC		(35,000)	136,400	-	98,200	214,853	451,191	663,251	696,413
Risk Adjusted Cash Flow from RCC		(35,000)	31,508	-	13,248	25,043	52,590	77,307	81,172
PV of Risk Adjusted Cash Flows		(32,123)	26,531	-	9,389	16,283	31,370	42,307	40,754
rNPV of RCC	**461,246**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Liver Carcincoma Indication (HCC)									
Clinical Phase of Ilixadencel for HCC		Phase II	Phase III	Phase III	Phase III	Phase III	Phase III	Registration	Introduced
Royalty Revenue from Ilixadencel for HCC Indication		-	-	-	-	-	-	-	55,271
Upfront Payment		-	98,200	-	-	-	-	-	-
Milestone Fee		-	-	-	-	-	-	98,200	-
Research & Development Expenses on HCC Indication		12,000	10,000	-	-	-	-	-	-
Net Cash Flow from HCC		(12,000)	88,200	-	-	-	-	98,200	55,271
Risk Adjusted Cash Flow from HCC		(12,000)	20,374	-	-	-	-	13,248	6,442
PV of Risk Adjusted Cash Flows		(11,014)	17,156	-	-	-	-	7,250	3,234
rNPV of HCC	**82,942**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Non-Small Cell Lung Carcincoma Indication (NSCLC)									
Clinical Phase of Ilixadencel for NSCLC		Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for NSCLC Indication		-	-	-	-	-	-	294,778	464,276
Upfront Payment		-	196,400	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on NSCLC Indication		25,000	25,000	-	-	-	-	-	-
Net Cash Flow from NSCLC		(25,000)	171,400	98,200	-	-	98,200	294,778	464,276
Risk Adjusted Cash Flow from NSCLC		(25,000)	26,224	3,471	-	-	2,027	5,257	8,280
PV of Risk Adjusted Cash Flows		(22,945)	22,082	2,681	-	-	1,209	2,877	4,157
rNPV of NSCLC	**324,433**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastrointestinal Stromal Tumor Indication (GIST)									
Clinical Phase of Ilixadencel for GIST		Phase II	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GIST Indication		-	-	-	-	-	-	98,698	145,086
Upfront Payment		-	98,200	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on GIST Indication		10,000	10,000	-	-	-	-	-	-
Net Cash Flow from GIST		(10,000)	88,200	98,200	-	-	98,200	98,698	145,086
Risk Adjusted Cash Flow from GIST		(1,530)	13,495	3,471	-	-	2,027	1,760	2,587
PV of Risk Adjusted Cash Flows		(1,404)	11,363	2,681	-	-	1,209	963	1,299
rNPV of GIST	**84,979**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Head & Neck Carcinoma Indication (HNSCC)									
Clinical Phase of Ilixadencel for HNSCC		Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for HNSCC Indication		-	-	-	-	-	-	19,740	103,633
Upfront Payment		-	98,200	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on HNSCC Indication		12,000	30,000	-	-	-	-	-	-
Net Cash Flow from HNSCC		(12,000)	68,200	98,200	-	-	98,200	19,740	103,633
Risk Adjusted Cash Flow from HNSCC		(12,000)	10,435	3,471	-	-	2,027	352	1,848
PV of Risk Adjusted Cash Flows		(11,014)	8,786	2,681	-	-	1,209	193	928
rNPV of HNSCC	**73,434**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastric Adenocarcinoma Indication (GA)									
Clinical Phase of Ilixadencel for GA		Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GA Indication		-	-	-	-	-	-	46,059	241,810
Upfront Payment		-	196,400	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on GA Indication		30,000	25,000	-	-	-	-	-	-
Net Cash Flow from GA		(30,000)	171,400	98,200	-	-	98,200	46,059	241,810
Risk Adjusted Cash Flow from GA		(30,000)	26,224	3,471	-	-	2,027	821	4,312
PV of Risk Adjusted Cash Flows		(27,534)	22,082	2,681	-	-	1,209	450	2,165
rNPV of GA	**165,903**								

Equity Value from rNPV Analysis

Valuation Approach	Value (SEK millions) as on 31-Dec-20
Value from rNPV Analysis - RCC	461
Value from rNPV Analysis - HCC	83
Value from rNPV Analysis - NSCLC	324
Value from rNPV Analysis - GIST	85
Value from rNPV Analysis - HNSCC	73
Value from rNPV Analysis - GA	166
Less: Unallocated Costs	(289)
Less: NPV of Tax	(276)
Add: Cash	263
Equity Value (SEK million)	**891**

**As on 01 June 2020*

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 14 years (2020P – 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 NPV Analysis has been assumed to be 33%, 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		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Kidney Carcincoma Indication (RCC)									
Clinical Phase of Ilixadencel for RCC		Phase II	Phase III	Phase III	Registration	Introduced			
Royalty Revenue from Ilixadencel for RCC Indication		-	-	-	-	214,853	451,191	663,251	696,413
Upfront Payment		-	196,400	-	-	-	-	-	-
Milestone Fee		-	-	-	98,200	-	-	-	-
Research & Development Expenses on RCC Indication		35,000	60,000	-	-	-	-	-	-
Net Cash Flow from RCC		(35,000)	136,400	-	98,200	214,853	451,191	663,251	696,413
PV of Cash Flows		(27,376)	83,351	-	36,626	62,605	102,711	117,957	96,762
NPV of RCC	**760,248**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Liver Carcincoma Indication (HCC)									
Clinical Phase of Ilixadencel for HCC		Phase II	Phase III	Phase III	Phase III	Phase III	Phase III	Registration	Introduced
Royalty Revenue from Ilixadencel for HCC Indication		-	-	-	-	-	-	-	55,271
Upfront Payment		-	98,200	-	-	-	-	-	-
Milestone Fee		-	-	-	-	-	-	98,200	-
Research & Development Expenses on HCC Indication		12,000	10,000	-	-	-	-	-	-
Net Cash Flow from HCC		(12,000)	88,200	-	-	-	-	98,200	55,271
PV of Cash Flows		(9,035)	49,930	-	-	-	-	13,358	5,653
NPV of HCC	**92,048**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Non-Small Cell Lung Carcincoma Indication (NSCLC)									
Clinical Phase of Ilixadencel for NSCLC		Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for NSCLC Indication		-	-	-	-	-	-	294,778	464,276
Upfront Payment		-	196,400	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on NSCLC Indication		25,000	25,000	-	-	-	-	-	-
Net Cash Flow from NSCLC		(25,000)	171,400	98,200	-	-	98,200	294,778	464,276
PV of Cash Flows		(18,823)	97,030	41,798	-	-	17,766	40,099	47,485
NPV of NSCLC	**797,858**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastrointestinal Stromal Tumor Indication (GIST)									
Clinical Phase of Ilixadencel for GIST		Phase II	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GIST Indication		-	-	-	-	-	-	98,698	145,086
Upfront Payment		-	98,200	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on GIST Indication		10,000	10,000	-	-	-	-	-	-
Net Cash Flow from GIST		(10,000)	88,200	98,200	-	-	98,200	98,698	145,086
PV of Cash Flows		(7,529)	49,930	41,798	-	-	17,766	13,426	14,839
NPV of GIST	**254,071**								

See important disclosures on page 41 of this report.

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Head & Neck Carcinoma Indication (HNSCC)									
Clinical Phase of Ilixadencel for HNSCC		Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for HNSCC Indication		-	-	-	-	-	-	19,740	103,633
Upfront Payment		-	98,200	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on HNSCC Indication		12,000	30,000	-	-	-	-	-	-
Net Cash Flow from HNSCC		(12,000)	68,200	98,200	-	-	98,200	19,740	103,633
PV of Cash Flows		(9,035)	38,608	41,798	-	-	17,766	2,685	10,599
NPV of HNSCC	**236,351**								

All figures are in SEK thousands		2020P	2021P	2022P	2023P	2024P	2025P	2026P	2027P
Gastric Adenocarcinoma Indication (GA)									
Clinical Phase of Ilixadencel for GA		Phase I	Phase II	Phase III	Phase III	Phase III	Registration	Introduced	
Royalty Revenue from Ilixadencel for GA Indication		-	-	-	-	-	-	46,059	241,810
Upfront Payment		-	196,400	-	-	-	-	-	-
Milestone Fee		-	-	98,200	-	-	98,200	-	-
Research & Development Expenses on GA Indication		30,000	25,000	-	-	-	-	-	-
Net Cash Flow from GA		(30,000)	171,400	98,200	-	-	98,200	46,059	241,810
PV of Cash Flows		(22,587)	97,030	41,798	-	-	17,766	6,265	24,732
NPV of GA	**477,504**								

Equity Value from NPV Analysis

Valuation Approach	Value (SEK millions) as on 31-Dec-20
Value from NPV Analysis - RCC	760
Value from NPV Analysis - HCC	92
Value from NPV Analysis - NSCLC	798
Value from NPV Analysis - GIST	254
Value from NPV Analysis - HNSCC	236
Value from NPV Analysis - GA	478
Less: Unallocated Costs	(289)
Less: NPV of Tax	(276)
Add: Cash	263
Equity Value (SEK million)	**2,316**

**As on 01 June 2020*

12. Analyst Certifications

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

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

Important Disclosures

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13. Glossary

IMMU	Immunicum AB
RCC	Renal Cell Carcinoma
mRCC	Metastatic Renal Cell Carcinoma
ORR	Objective Response Rate
HCC	Hepatocellular Carcinoma
DEC	Dose Escalation Committee
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
AE	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
DC	Dendritic Cells
HCATS	Hitachi Chemical Advanced Therapeutics Solutions
SPC	Supplementary Protection Certificates
IO	Immuno-Oncology
mAb	Monoclonal Antibodies
IL	Interleukins
IFN	Interferons
NK	Natural Killer
OS	Overall Survival
ATMPs	Advance Therapy Medicinal Products
TOPRA	The Organization for Professionals in Regulatory Affairs
IARC	International Agency for Research on Cancer
WIPO	World Intellectual Property Organization
SEK	Swedish Krona

[i] *Bloomberg as on June-01-2020*

[ii] *30 Day Avg Volume calculated using Bloomberg data as on June-01-2020*

[iii] *Source: Company Website*