

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of  
the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): January 4, 2023

**SELECTA BIOSCIENCES, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction  
of incorporation)

**001-37798**  
(Commission  
File Number)

**26-1622110**  
(IRS Employer  
Identification No.)

**65 Grove Street, Watertown, MA 02472**  
(Address of principal executive offices)(Zip Code)

**(617) 923-1400**  
Registrant's telephone number, including area code

**N/A**  
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

**Securities registered pursuant to Section 12(b) of the Act:**

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock (Par Value \$0.0001)	SELB	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

**Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.**

On January 4, 2023, Göran A. Ando, M.D., a member of the Board of Directors (the "Board") of Selecta Biosciences, Inc. (the "Company"), notified the Company that he is retiring from the Company's Board effective immediately. Prior to his retirement, Dr. Ando served on the Board's Compensation and Research and Development Committees, and will cease service on each committee in connection with his retirement. Dr. Ando's retirement was not the result of a disagreement with the Company on any matter relating to the Company's operations, policies or practices.

Dr. Ando has been a valued member of the Company's Board since April 2020, providing exemplary service and many important contributions to the Company during his tenure on the Board. The Company thanks Dr. Ando for his advice and leadership as a member of the Company's Board and wishes Dr. Ando well in his retirement.

**Item 7.01. Regulation FD Disclosure.**

On January 9, 2023, the Company issued a press release announcing certain information relating to its business. A copy of the press release is attached to this Current Report on Form 8-K as Exhibit 99.1. The Company undertakes no obligation to update, supplement or amend the materials attached hereto as Exhibit 99.1.

On January 9, 2023, the Company issued a press release announcing certain information relating to its business. A copy of the press release is attached to this Current Report on Form 8-K as Exhibit 99.2. The Company undertakes no obligation to update, supplement or amend the materials attached hereto as Exhibit 99.2.

Additionally, the Company from time to time presents and/or distributes to the investment community at various industry and other conferences slide presentations to provide updates and summaries of its business. A copy of its current corporate slide presentation is attached to this Current Report on Form 8-K as Exhibit 99.3. The Company undertakes no obligation to update, supplement or amend the materials attached hereto as Exhibit 99.3.

The information in Item 7.01 of this Form 8-K, including Exhibit 99.1, Exhibit 99.2, and Exhibit 99.3 attached hereto, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such a filing.

**Item 9.01. Financial Statements and Exhibits.**

(d) Exhibits

<u>Exhibit No.</u>	<u>Description</u>
<a href="#">99.1</a>	<a href="#">Press Release Issued on January 9, 2023</a>
<a href="#">99.2</a>	<a href="#">Press Release Issued on January 9, 2023</a>
<a href="#">99.3</a>	<a href="#">Corporate slide presentation of Selecta Biosciences, Inc. dated January 2023</a>
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

SELECTA BIOSCIENCES, INC.

Date: January 9, 2023

By: /s/ Carsten Brunn, Ph.D.  
Carsten Brunn, Ph.D.  
President and Chief Executive Officer



Press Release

## Selecta Biosciences and Astellas Announce Exclusive Licensing and Development Agreement for Xork IgG Protease

*Next-generation IgG protease candidate Xork to be licensed for development with AT845, an investigational Astellas Gene Therapies' product, for the treatment of Pompe Disease*

*Selecta to receive a \$10M upfront payment and eligible to receive up to \$340M for certain additional development and commercial milestones plus royalties on commercial sales*

**WATERTOWN, Mass. and TOKYO, Japan, January 9, 2023** -- Selecta Biosciences, Inc. (NASDAQ: SELB, President and CEO: Carsten Brunn, Ph.D., "Selecta"), and Astellas Pharma Inc. (TSE: 4503, President and CEO: Kenji Yasukawa, Ph.D., "Astellas" or "Astellas Gene Therapies") today announced an exclusive licensing and development agreement for IdeXork (Xork). Xork is being studied as a potential next generation immunoglobulin G (IgG) protease that will be developed by Astellas for use with AT845, an investigational, adeno-associated virus (AAV)-based treatment for Late-Onset Pompe disease (LOPD) in adults.

"Currently many patients are ineligible for clinical trials with investigational AAV gene therapy products due to the presence of naturally occurring antibodies against AAV gene therapy capsids," said Carsten Brunn, Ph.D., President and Chief Executive Officer of Selecta. "Xork has the potential to expand access to life-changing gene therapies by addressing pre-existing immunity to AAV. Most other IgG proteases in development are derived from common human pathogens, and as a result there is a high prevalence of pre-existing antibodies against these proteases that can restrict their use. Xork is differentiated by its low cross-reactivity to pre-existing antibodies in human serum. We are thrilled to partner with Astellas as they advance their robust gene therapy portfolio through the clinic."

Naoki Okamura, Chief Strategy Officer of Astellas added, "We are looking forward to partnering with Selecta as we strive to expand our therapies to a broader range of patients living with debilitating diseases, who have limited treatment options. This agreement provides an opportunity to deliver potentially transformative gene therapy treatments to a specific population of LOPD adult patients who might otherwise be ineligible for clinical trials or treatment with Astellas' investigational product."

Under the terms of the agreement, Selecta will receive a \$10M upfront payment and is eligible to receive up to \$340M for certain additional development and commercial milestones plus royalties on any potential commercial sales where Xork is used as a pre-treatment for AT845. Selecta is responsible for the development and manufacturing of Xork and will maintain the rights for the development of additional indications beyond Pompe disease. Astellas would have the sole and exclusive right to commercialize Xork for use in Pompe disease with an Astellas gene therapy investigational or authorized product, with a current focus on AT845.

### About Selecta Biosciences, Inc.

Selecta Biosciences Inc. (NASDAQ: SELB) is a clinical stage biotechnology company leveraging its ImmTOR™ platform to develop tolerogenic therapies that selectively mitigate unwanted immune responses. With a proven ability to induce tolerance to highly immunogenic proteins, ImmTOR has the potential to amplify the efficacy of biologic therapies, including redosing of life-saving gene therapies, as well as restore the body's natural self-tolerance in autoimmune diseases. Selecta has several proprietary and partnered programs in its pipeline focused on enzyme therapies, gene therapies, and autoimmune diseases. Selecta Biosciences is headquartered in the Greater Boston area. For more information, please visit [www.selectabio.com](http://www.selectabio.com).

### About AT845 for the treatment of Late-Onset Pompe Disease (LOPD)

Astellas is developing AT845, a novel gene replacement therapy using an AAV8 vector under a muscle-specific promoter to deliver a functional copy of the *GAA* gene, for the treatment of adult LOPD. AT845 is being investigated to determine whether it can deliver a functional *GAA* gene that is efficiently transduced to express GAA directly in tissues affected by the disease, including skeletal and cardiac muscle.

#### **About Astellas**

Astellas Pharma Inc. is a pharmaceutical company conducting business in more than 70 countries around the world. We are promoting the Focus Area Approach that is designed to identify opportunities for the continuous creation of new drugs to address diseases with high unmet medical needs by focusing on Biology and Modality. Furthermore, we are also looking beyond our foundational Rx focus to create Rx+® healthcare solutions that combine our expertise and knowledge with cutting-edge technology in different fields of external partners. Through these efforts, Astellas stands on the forefront of healthcare change to turn innovative science into VALUE for patients. For more information, please visit our website at <https://www.astellas.com/en>.

#### **About Astellas Gene Therapies**

Astellas Gene Therapies is an Astellas Center of Excellence developing genetic medicines with the potential to deliver transformative value for patients. Our gene therapy drug discovery engine is built around innovative science, a validated AAV platform, and industry leading internal manufacturing capability with a particular focus on rare diseases of the eye, CNS and neuromuscular system. Astellas Gene Therapies will also be advancing additional Astellas gene therapy programs toward clinical investigation. Astellas Gene Therapies is based in San Francisco, with manufacturing and laboratory facilities in South San Francisco, Calif., Sanford, N.C. and Tsukuba, Japan.

#### **Astellas Cautionary Notes**

In this press release, statements made with respect to current plans, estimates, strategies and beliefs and other statements that are not historical facts are forward-looking statements about the future performance of Astellas. These statements are based on management's current assumptions and beliefs in light of the information currently available to it and involve known and unknown risks and uncertainties. A number of factors could cause actual results to differ materially from those discussed in the forward-looking statements. Such factors include, but are not limited to: (i) changes in general economic conditions and in laws and regulations, relating to pharmaceutical markets, (ii) currency exchange rate fluctuations, (iii) delays in new product launches, (iv) the inability of Astellas to market existing and new products effectively, (v) the inability of Astellas to continue to effectively research and develop products accepted by customers in highly competitive markets, and (vi) infringements of Astellas' intellectual property rights by third parties. Information about pharmaceutical products (including products currently in development) which is included in this press release is not intended to constitute an advertisement or medical advice.

#### **Selecta Forward-Looking Statements**

*Any statements in this press release about the future expectations, plans and prospects of Selecta Biosciences, Inc. (the "Company"), including without limitation, statements regarding the unique proprietary technology platform of the Company and its partners, the anticipated benefits of the Company's licensing and development agreement with Astellas related to Xork, the potential of ImmTOR to enable re-dosing of AAV gene therapy and to mitigate immunogenicity, the potential of ImmTOR and the Company's product pipeline to treat chronic refractory gout, MMA, IgAN, other autoimmune diseases, lysosomal storage disorders, or any other disease, the anticipated timing or the outcome of ongoing and planned clinical trials, studies and data readouts, the anticipated timing or the outcome of the FDA's review of the Company's regulatory filings, the Company's and its partners' ability to conduct its and their clinical trials and preclinical studies, the timing or making of any regulatory filings, the anticipated timing or outcome of selection of developmental product candidates, the potential treatment applications of product candidates utilizing the ImmTOR platform in areas such as gene therapy, gout and autoimmune disease, the ability of the Company and its partners where applicable to develop gene therapy products using ImmTOR, the novelty of treatment paradigms that the Company is able to develop, whether the observations made in non-human study subjects will translate to studies performed with human beings, the potential of any therapies developed by the Company to fulfill unmet medical needs, the Company's plan to apply its ImmTOR technology platform to a range of biologics for rare and orphan genetic diseases, the potential of the Company's technology to enable repeat administration in gene therapy product candidates and products, the ability to re-dose patients and the potential of ImmTOR to allow for re-dosing, the potential to safely re-dose AAV, the ability to restore transgene expression, the potential of the ImmTOR technology platform generally and the Company's ability to grow its strategic partnerships and enrollment in the Company's clinical trials and other statements containing the words "anticipate," "believe," "continue," "could," "estimate," "expect," "hypothesize," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "would," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation*

*Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including, but not limited to, the following: the uncertainties inherent in the initiation, completion and cost of clinical trials including proof of concept trials, including the uncertain outcomes, the availability and timing of data from ongoing and future clinical trials and the results of such trials, whether preliminary results from a particular clinical trial will be predictive of the final results of that trial and whether results of early clinical trials will be indicative of the results of later clinical trials, the ability to predict results of studies performed on human beings based on results of studies performed on non-human subjects, the unproven approach of the Company's ImmTOR technology, potential delays in enrollment of patients, undesirable side effects of the Company's product candidates, its reliance on third parties to manufacture its product candidates and to conduct its clinical trials, the Company's inability to maintain its existing or future collaborations, licenses or contractual relationships, its inability to protect its proprietary technology and intellectual property, potential delays in regulatory approvals, the availability of funding sufficient for its foreseeable and unforeseeable operating expenses and capital expenditure requirements, the Company's recurring losses from operations and negative cash flows, substantial fluctuation in the price of the Company's common stock, risks related to geopolitical conflicts and pandemics and other important factors discussed in the "Risk Factors" section of the Company's most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q, and in other filings that the Company makes with the Securities and Exchange Commission. In addition, any forward-looking statements included in this press release represent the Company's views only as of the date of its publication and should not be relied upon as representing its views as of any subsequent date. The Company specifically disclaims any intention to update any forward-looking statements included in this press release, except as required by law.*

**Selecta Bio**

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## Selecta Biosciences Provides Business Update and Outlook for 2023

*-Expected topline data for Phase 3 DISSOLVE I & II programs of SEL-212 in chronic refractory gout in Q1 2023-*

*-To receive \$10 million upfront for the execution of a license agreement- for Xork the Company's next-generation immunoglobulin G (IgG) protease candidate to be developed with Astellas Gene Therapies' AT845, an investigational product for the treatment of Pompe disease-*

*-Selected an interleukin-2 (IL-2) development candidate to be studied in combination with ImmTOR™ further expanding pipeline in autoimmune disease-*

*-Initiated ReiMMagine, the Phase 1/2 clinical trial for the treatment of methylmalonic acidemia (MMA) with the potential to further validate the ImmTOR™ platform in the field of gene therapy-*

*-Selected immunoglobulin A (IgA) protease development candidate from IGAN Biosciences for the treatment of IgA nephropathy (IgAN)-*

**WATERTOWN, Mass. January 9, 2023** -- Selecta Biosciences, Inc. (NASDAQ: SELB), a biotechnology company leveraging its clinically validated ImmTOR™ platform to develop tolerogenic therapies for autoimmune diseases and gene therapies, today provided a corporate update, including its roadmap for 2023.

### Key 2023 Anticipated Milestones

- Report top-line data from Phase 3 DISSOLVE I & II programs of SEL-212 in chronic refractory gout in Q1 2023
- Preliminary Phase 1 SEL-302 data in gene therapy for MMA
- Initiate IND enabling studies with the selected IL-2 candidate to further advance and expand the immune tolerance platform in autoimmune disease
- Begin IND enabling studies with the selected IgA protease candidate from IGAN Biosciences

“In 2022, we delivered on key milestones that further validated the value and breadth of our innovative ImmTOR® and ImmTOR-IL™ immune tolerance platforms, continued to advance our diversified clinical pipeline and established strategic collaborations that will propel our next-generation programs toward multiple IND filings,” said Carsten Brunn, Ph.D., President and Chief Executive Officer of Selecta. “Building on the momentum of our recently announced deal with Astellas Gene Therapies’ for Xork in Pompe disease, the initiation of the Phase 1/2 trial in methylmalonic acidemia, the identification of an IL-2 candidate and selection of an IgA protease candidate, we also expect joint topline data from the Phase 3 DISSOLVE clinical program investigating SEL-212 in chronic refractory gout in Q1 2023. We are at a pivotal moment in the Company’s growth trajectory and as we look ahead, we believe we are well positioned to take a potentially generational leap forward for our precision immune tolerance platform, advance our pipeline in autoimmune disease and continue to explore additional collaborations to maximize the value of our ImmTOR platform and pipeline.”

### Clinical Development Overview

#### Tolerogenic Therapies for Autoimmune Disease:

**ImmTOR-IL:** In December 2022, the Company opted into an agreement for an identified IL-2 candidate and is currently negotiating the terms of the license. The IL-2 candidate will be studied in combination with ImmTOR to further advance and expand the pipeline in autoimmune disease. The combination of ImmTOR and IL-2 (ImmTOR-IL) represents an evolution of the precision immune tolerance platform to further enhance the magnitude and duration of antigen-specific immune tolerance for the treatment of patients with autoimmune diseases.

- The Company plans to initiate IND enabling studies in 2023 while also exploring multiple autoimmune indications that would be suitable for study with ImmTOR-IL.

#### **Gene Therapies:**

SEL-302 for Methylmalonic Acidemia (MMA): In December 2022, Selecta initiated ReiMMAGine, the Phase 1/2 clinical trial of SEL-302, an adeno-associated virus (AAV) gene therapy combined with ImmTOR for the treatment of MMA.

- The ReiMMAGine trial is now enrolling patients and aims to evaluate the safety, tolerability and efficacy of SEL-302, a combination of ImmTOR and AAV gene therapy.

SEL-018 IgG Protease (Xork) for Pompe Disease: In January 2023, the Company announced an exclusive licensing and development agreement for IdeXork (Xork), a next-generation immunoglobulin G (IgG) protease, to be developed for use with AT845, Astellas Gene Therapies' investigational AAV-based treatment for Late-Onset Pompe disease (LOPD) in adults.

- Xork has the potential to expand access of life-changing gene therapies to more patients by addressing pre-existing immunity to AAV. Xork is differentiated by its low cross reactivity to pre-existing antibodies in human serum.
- Under the terms of the agreement, Selecta will receive a \$10M upfront payment and is eligible to receive up to \$340M for certain additional development and commercial milestones plus royalties on commercial sales. Selecta is responsible for the early development activities and manufacturing of Xork and will maintain the rights for the development of additional indications beyond Pompe disease.

#### **Biologic Therapies:**

SEL-212 for chronic refractory gout: DISSOLVE, the Phase 3 development program of SEL-212, which has been licensed to Sobi continues to advance. DISSOLVE I & II trials are on track for joint topline data expected in Q1 2023.

ImmTOR with IgA Protease for IgA Nephropathy: In December 2022, the Company selected the next generation Immunoglobulin A (IgA) protease from IGAN Biosciences for the treatment of IgAN.

- Identified a new class of IgA protease from commensal bacteria with a lower level of baseline anti-drug antibodies (ADAs). Combining ImmTOR with this next generation IgA protease candidate has the potential to mitigate the formation of new ADAs and address the underlying pathophysiology of IgAN.

#### **Further Corporate Updates:**

In November 2022, Blaine Davis was appointed as Chief Financial Officer. Mr. Davis brings more than 25 years of experience in investor relations, business development, corporate affairs and sales and marketing at life sciences companies, with a particular focus on rare diseases.

#### **About Selecta Biosciences, Inc.**

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**For Investors:**

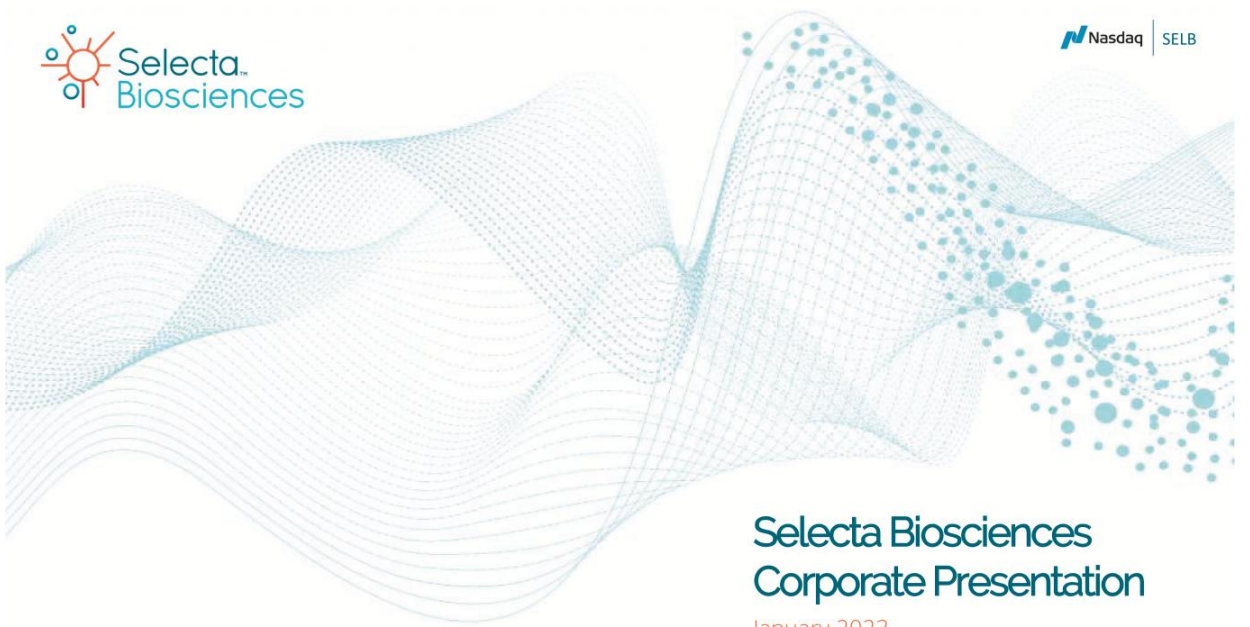
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Nasdaq | SELB



# Selecta Biosciences Corporate Presentation

January 2023

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## Safe harbor / disclaimer

Any statements in this presentation about the future expectations, plans and prospects of Selecta Biosciences, Inc. (the "Company"), including without limitation, statements regarding the Company's cash runway, the unique proprietary technology platform of the Company, and the unique proprietary platform of its partners, the potential of ImmTOR to enable re-dosing of AAV gene therapy and to mitigate immunogenicity, the potential of ImmTOR and the Company's product pipeline to treat chronic refractory gout, MMA, IgAN, other autoimmune diseases, lysosomal storage disorders, or any other disease, the anticipated timing or the outcome of ongoing and planned clinical trials, studies and data readouts, the anticipated timing or the outcome of the FDA's review of the Company's regulatory filings, the Company's and its partners' ability to conduct its and their clinical trials and preclinical studies, the timing or making of any regulatory filings, the potential treatment applications of product candidates utilizing the ImmTOR platform in areas such as gene therapy, gout and autoimmune disease, the ability of the Company and its partners where applicable to develop gene therapy products using ImmTOR, the novelty of treatment paradigms that the Company is able to develop, whether the observations made in non-human study subjects will translate to studies performed with human beings, the potential of any therapies developed by the Company to fulfill unmet medical needs, the Company's plan to apply its ImmTOR technology platform to a range of biologics for rare and orphan genetic diseases, the potential of the Company's technology to enable repeat administration in gene therapy product candidates and products, the ability to re-dose patients and the potential of ImmTOR to allow for re-dosing, the potential to safely re-dose AAV, the ability to restore transgene expression, the potential of the ImmTOR technology platform generally and the Company's ability to grow its strategic partnerships, and other statements containing the words "anticipate," "believe," "continue," "could," "estimate," "expect," "hypothesize," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "would," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including, but not limited to, the following: the uncertainties inherent in the initiation, completion and cost of clinical trials including proof of concept trials, including the uncertain outcomes, the availability and timing of data from ongoing and future clinical trials and the results of such trials, whether preliminary results from a particular clinical trial will be predictive of the final results of that trial or whether results of early clinical trials will be indicative of the results of later clinical trials, the ability to predict results of studies performed on human beings based on results of studies performed on non-human subjects, the unproven approach of the Company's ImmTOR technology, potential delays in enrollment of patients, undesirable side effects of the Company's product candidates, its reliance on third parties to manufacture its product candidates and to conduct its clinical trials, the Company's inability to maintain its existing or future collaborations, licenses or contractual relationships, its inability to protect its proprietary technology and intellectual property, potential delays in regulatory approvals, the availability of funding sufficient for its foreseeable and unforeseeable operating expenses and capital expenditure requirements, the Company's recurring losses from operations and negative cash flows, substantial fluctuation in the price of its common stock, risks related to geopolitical conflicts and pandemics and other important factors discussed in the "Risk Factors" section of the Company's most recent Annual Report on Form 10-K, and in other filings that the Company makes with the Securities and Exchange Commission. In addition, any forward-looking statements included in this presentation represent the Company's views only as of the date of its publication and should not be relied upon as representing its views as of any subsequent date. The Company specifically disclaims any intention to update any forward-looking statements included in this presentation.

# *Pioneering Precision Immune Tolerance*

1

**ImmTOR® and ImmTOR-IL™ immune tolerance platforms** have potentially broad applicability to address the challenges of **autoimmunity and immunogenicity**

2

**Diversified pipeline** of novel therapeutic candidates; proof of concept in biologics and gene therapy, **expanding into autoimmune disease**

3

**Topline Phase 3 data for SEL-212** in chronic refractory gout expected in **Q1 2023**, with additional value-generating milestones anticipated in 2023

4

**Multiple strategic partnerships** designed to validate platform and maximize its potential

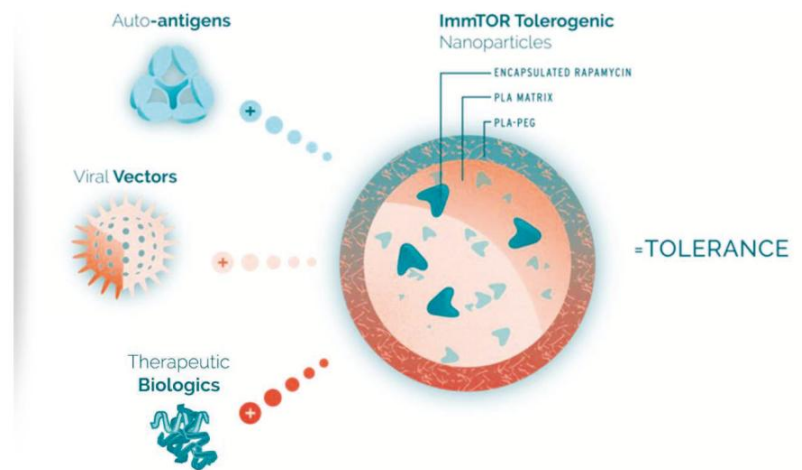
5

Strong balance sheet, positioned to reach multiple value inflection points with expected **runway into mid-2024**

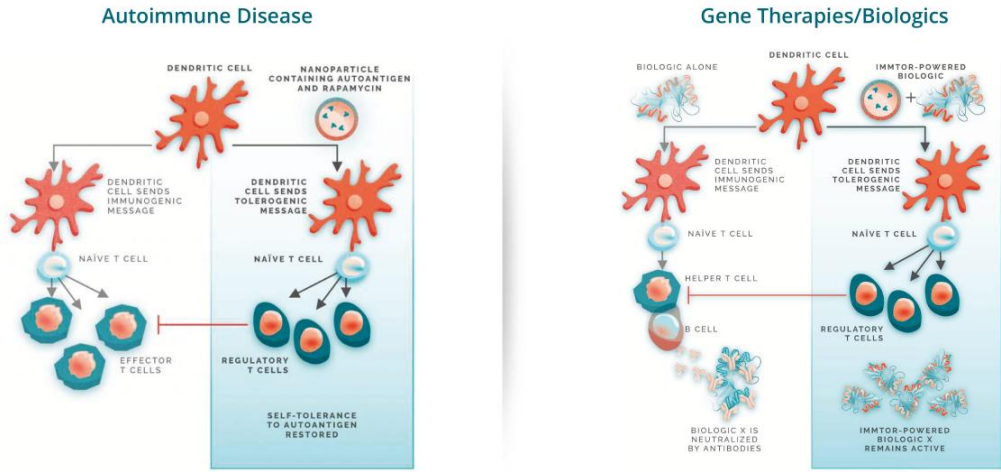
## Proprietary precision immune tolerance platform with potentially broad applicability

ImmTOR combines nanoparticle technology with an FDA approved anti-inflammatory and immunomodulatory drug

Designed to generate **antigen-specific immune tolerance** when combined with an antigen of interest



# ImmTOR aims to restore self tolerance in autoimmune disease and overcome immunogenicity of gene therapies and biologics



# A diversified and growing wholly-owned pipeline

Indication                      Antigen                      Preclinical      Phase 1      Phase 2      Phase 3      Recent and Expected Upcoming Milestones

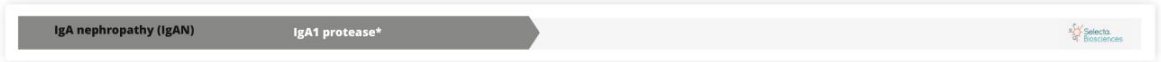
## TOLEROGENIC THERAPIES



## GENE THERAPIES




## BIOLOGIC THERAPIES

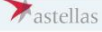





\*Option & License Agreement with IGAN Biosciences



# Unlocking the potential of our platform through collaborations

Indication	Antigen	Preclinical	Phase 1	Phase 2	Phase 3	Upcoming Milestones	Commercial Rights
<b>BIOLOGIC THERAPIES</b>							
Chronic Refractory Gout	Pegadricase			SEL-212		DISSOLVE Topline Data Q1 2023	

<b>GENE THERAPIES</b>							
Pompe disease	IgG protease (Xork)		SEL-018				
Duchenne muscular dystrophy (DMD)	Undisclosed						
Limb-girdle muscular dystrophy (LGMD)	Undisclosed						
Two indications for lysosomal storage disorders	Undisclosed						





Restoring Self-Tolerance in  
Autoimmune Disease

## Striving to restore self-tolerance in autoimmune diseases

ImmTOR + IL-2 has the potential to be a best-in-class approach



Roughly **80 autoimmune conditions** affect as much as **4.5% of the world's population\***; **24M+ individuals in the US** alone are affected by autoimmune diseases\*\*

The current standard of care is broad immunosuppression, which is associated with side effects and leaves patients vulnerable to serious infection and malignancies

There is a significant need for **antigen-specific** therapies that can induce immune tolerance to pathogenic autoantigens without the need for chronic and systemic immune suppression



Approach: restore **natural self-tolerance by administering ImmTOR with nanoparticle-encapsulated self-antigens** and avoid the need for chronic and systemic immune suppression

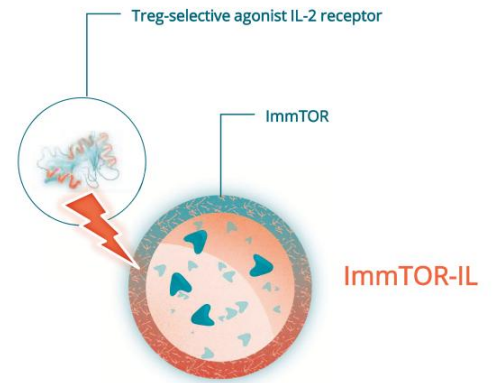
**Aiming to expand antigen-specific Tregs and enhance durability of tolerance by developing a proprietary Treg-selective IL-2 to combine with ImmTOR and autoantigens**

# ImmTOR-IL : ImmTOR plus IL-2 receptor agonist

## Evolution of the ImmTOR Platform

- Synergistic mechanism of ImmTOR and a Treg-selective IL-2
- Identified an **interleukin-2 (IL-2) cytokine with plans to advance it through the next stage of development**
- Observed to greatly increase the magnitude and durability of **antigen-specific Treg** expansion when compared to either ImmTOR or IL-2 alone
- Proof of concept human data in which we observed ImmTOR alone and IL-2 alone lowers the translational risk and provides further confidence in the clinical utility of this potentially synergistic approach
- Potential to enable **lower and fewer doses of ImmTOR**

	IL-2 mutein	ImmTOR	ImmTOR-IL
Induce Treg	✗	✓	✓
Expand existing Tregs	✓	✗	✓
Antigen-specific	✗	✓	✓
	Expansion of all pre-existing Tregs	Induction of target antigen-specific Tregs	Induction and expansion of antigen-specific Tregs

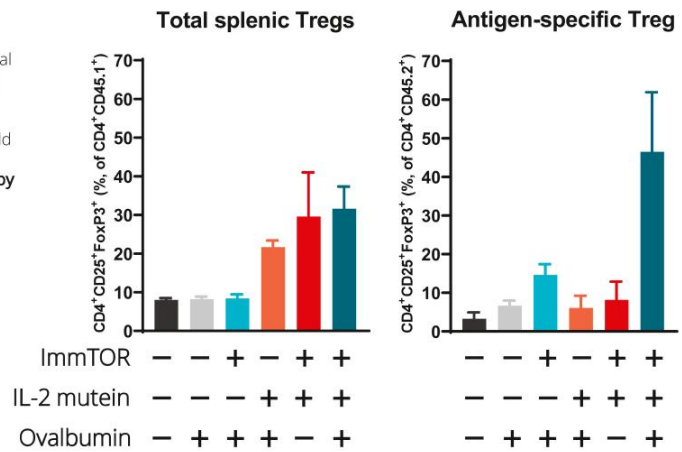


## Induction and expansion of antigen-specific Treg

Observed a significant expansion of [antigen-specific Treg\\*](#) with a single dose of ImmTOR in combination with an IL-2 mutein + antigen

With superior expansion and durability of total Tregs, Selecta potentially **has a best-in-class IL-2 therapy**

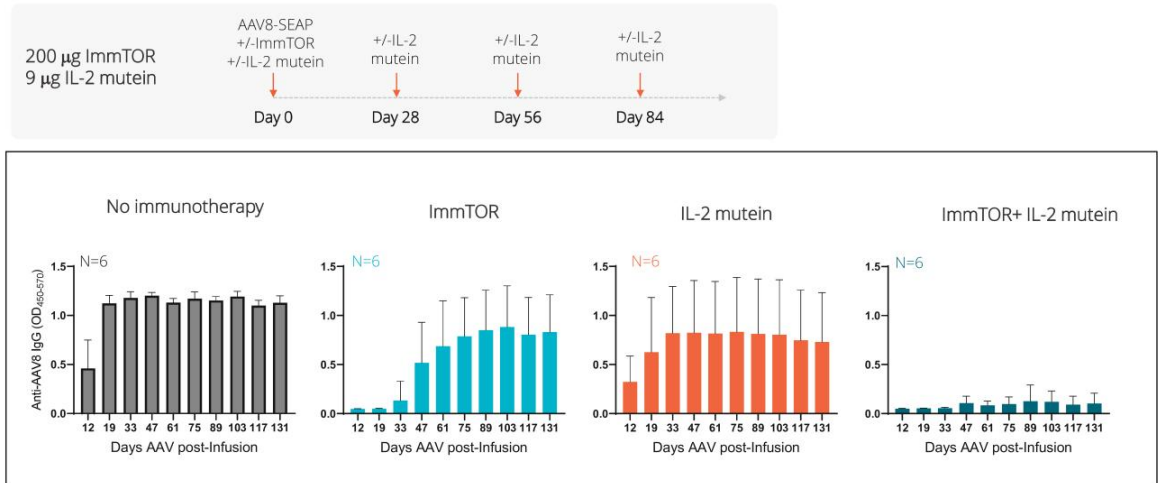
Data believed to show an approximately 3-fold increase in antigen-specific Tregs, and an opportunity to enable a **"first in class" therapy for autoimmune disorders**



\*study conducted in wildtype mice after adoptive transfer of ovalbumin specific transgenic T-cells

# ImmTOR-IL mitigates immunogenicity of high vector dose AAV gene therapy

ImmTOR + 4 monthly doses of IL-2 mutein inhibits anti-AAV antibodies at 5E13 vg/kg dose

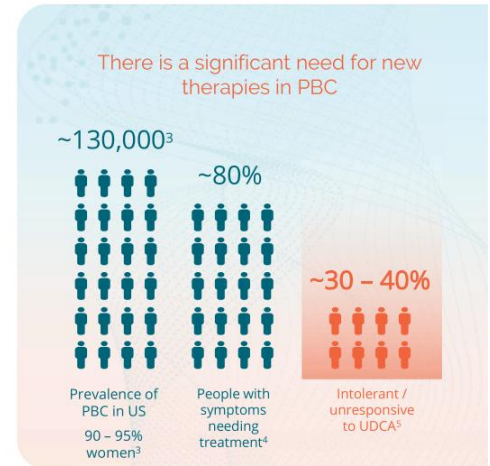


Preclinical data presented at ASGCT 2022, Poster title: Combination of ImmTOR Tolerogenic Nanoparticles and IL-2 Mutein Synergistically Inhibits the Formation of Anti-AAV Antibodies

## Initial autoimmune disease focus: Primary Biliary Cholangitis (PBC)

ImmTOR + PDC-E2 antigen has the potential to address underlying autoimmune disease

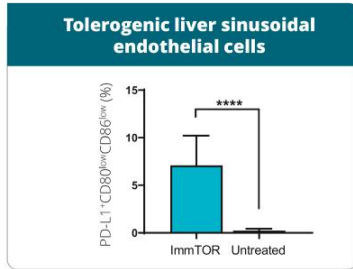
- PBC is a rare T-cell mediated autoimmune liver disease
  - It is driven by a well-defined pathogenic antigen: **PDC-E2**
  - Leads to bile duct damage, progressive inflammation, scarring (cirrhosis) and eventually, liver failure
- Current therapies do not address underlying disease or key symptoms
  - **30 - 40%** of patients are intolerant / unresponsive to current SoC (UDCA<sup>1</sup>), and OCA<sup>2</sup> is marred by high AE rates and black box warnings
- Our approach has the potential to directly address underlying disease
  - In preclinical studies ImmTOR induced a **strong tolerogenic environment and showed hepatoprotective properties in liver injury models**
  - Co-administration of ImmTOR with PDC-E2 has the potential to **restore immune tolerance in the liver**



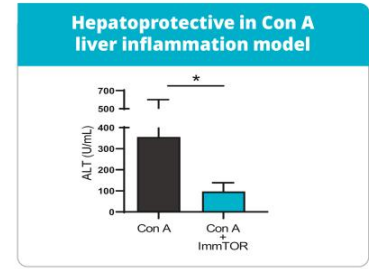
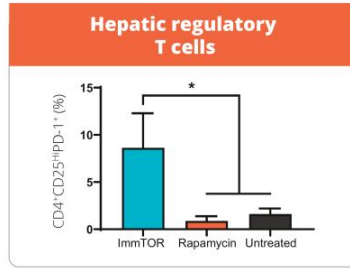
# An ImmTOR-based approach to treating primary biliary cholangitis (PBC)

Selecta intends to co-administer ImmTOR with PDC-E2, the autoantigen implicated in PBC

**We believe ImmTOR is ideally suited to address the root cause of PBC**



\* P=0.05, \*\*\*\*P=0.0001



PBC is a T-cell mediated disease driven by a well-defined antigen, ImmTOR designed to biodistribute to the liver and induce a tolerogenic environment, ImmTOR observed to exhibit hepatoprotective properties in liver injury models<sup>1</sup>



Gene Therapy



## AAV gene therapies are coming of age but still have challenges

Selecta has platform technologies to potentially address many key challenges facing the modality



» While most gene therapy trials use AAV vectors, the formation of neutralizing antibodies (NAbs) after AAV vector administration prevents redosing

- Adverse patient events related to high vector doses is inextricably linked to immunogenicity\*
- **Pre-existing immunity to AAV vectors excludes significant numbers of patients**



» ImmTOR and Xork offer independent value creation opportunities with existing and new partners

- **ImmTOR** – Human proof of concept shows the possibility for ImmTOR to inhibit the formation of NAbs to AAV vectors. Extensive preclinical work shows the potential for **improved and more durable transgene expression upon the first dose** and potential hepatoprotective benefits
- **Xork** – Cleaves human IgG specifically, efficiently and shows low cross reactivity to human sera potentially **opening a potential treatment window for those with pre-existing immunity to AAV vectors**

## Aiming to have the leading toolkit to power AAV gene therapies



**"Gene therapy is a one time only treatment"**

The ImmTOR platform has shown the ability to **mitigate the formation neutralizing antibodies (NAbs)** to empty capsids in humans

Preventing the formation of NAbs could enable redosing of gene therapies



**"Patient eligibility is limited"**

Xork can cleave IgG potentially opening a therapeutic window for gene therapy treatment and **enable redosing**

Increasing patients eligible for gene therapies can bring hope to those without treatment alternatives and make programs more commercially viable



**"High doses are needed to ensure therapeutic benefit"**

Low transduction efficiency and lack of organ specificity requires higher doses to ensure therapeutic benefit

Selecta has partnered with a leading synthetic biology company to engineer next generation capsids with improved transduction and organ specificity

# ImmTOR could enable safer, more efficacious gene therapy treatments

ImmTOR is designed to be dose sparing – a key safety consideration and manufacturing benefit

Day 0

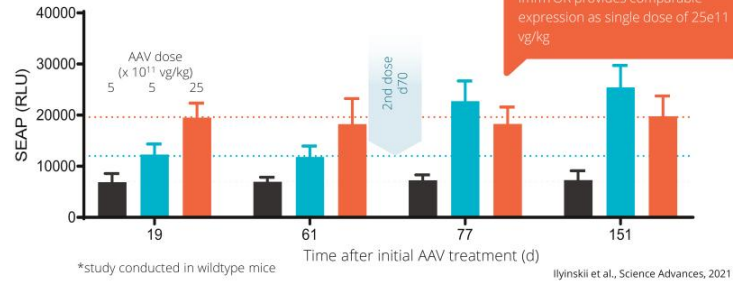
5e11 vg/kg AAV-SEAP  
5e11 vg/kg AAV-SEAP + ImmTOR  
25e11 vg/kg AAV-SEAP

Day 70

5e11 vg/kg AAV-SEAP  
5e11 vg/kg AAV-SEAP + ImmTOR  
25e11 vg/kg AAV-SEAP

ImmTOR has been observed to **enhance transgene expression** after first and second doses of AAV

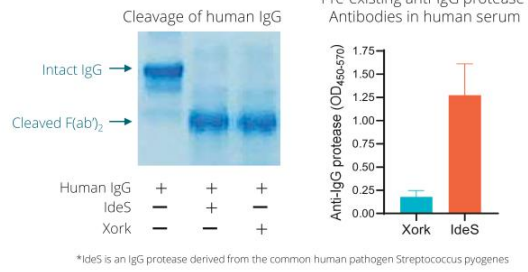
**Repeat dosing enabled** by ImmTOR is dose sparing



# Aiming to simultaneously address two key challenges in AAV gene therapy

The combination of ImmTOR and Xork could make gene therapy both accessible and re-dosable

## Xork is an IgG protease derived from a non-human pathogen

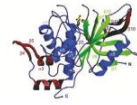


ImmTOR



+

Xork



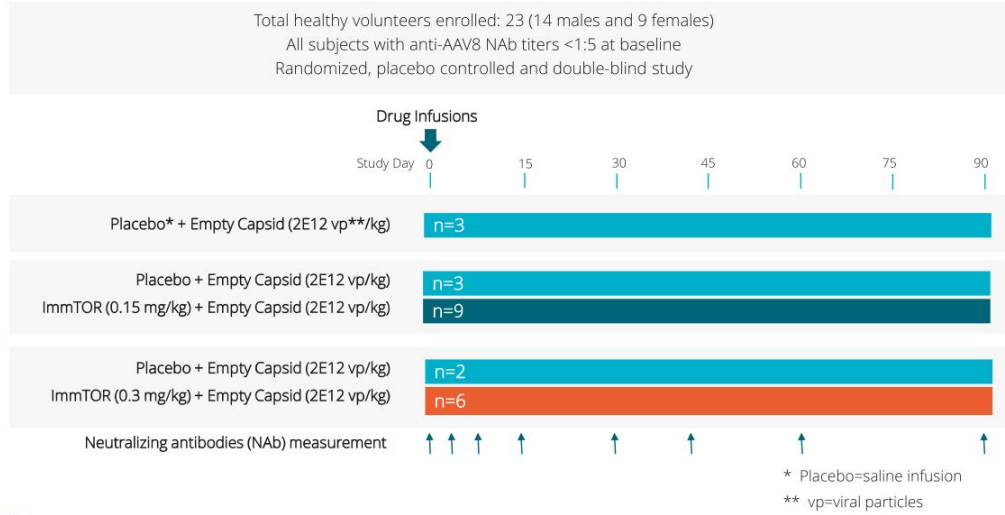
- Mitigate NAb formation
- Address re-dosing issues
- Enhance expression

- Cleave pre-existing IgG



Potential to make gene therapy both accessible & re-dosable

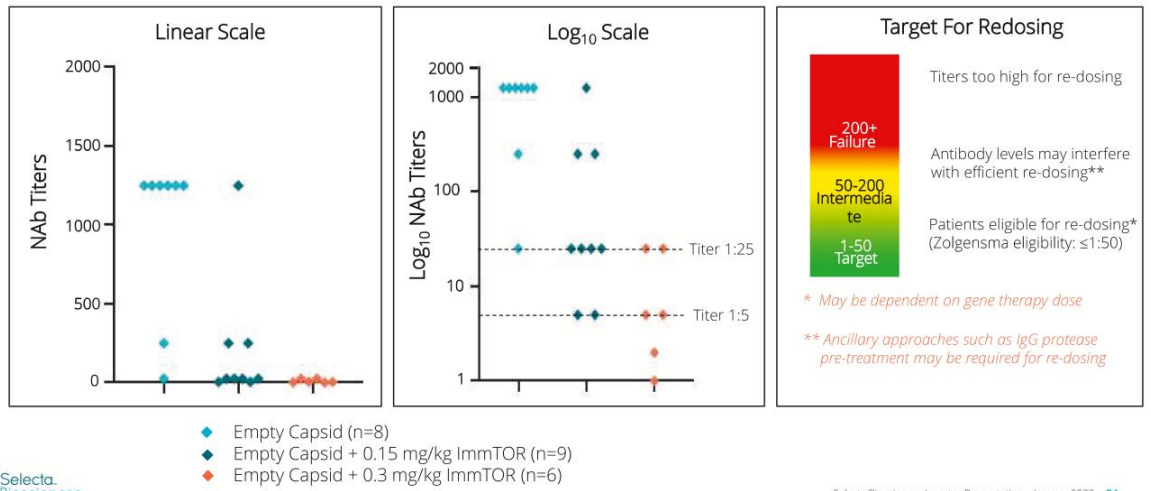
## SEL-399 (empty-AAV8 capsid) Phase 1 dose-escalation study



## Single dose ImmTOR observed to inhibit anti-AAV8 NAb formation at day 30

100% of subjects dosed with 0.3 mg/kg ImmTOR had NAb titers  $\leq 1:25$  at Day 30

67% of subjects dosed with 0.3 mg/kg ImmTOR had NAb titers  $\leq 1:5$  at Day 30



## Summary and conclusions

- We observed AAV8 empty capsids **eliciting a strong immune response** with peak median anti-AAV8 NAb titers of 1:6875
- We observed **ImmTOR inhibiting the formation of anti-AAV8 NAb in a dose-dependent manner** at Day 30

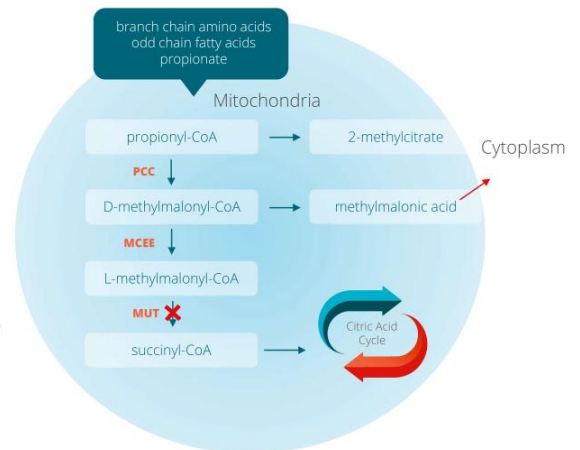
ImmTOR Dose	Subjects $\leq$ 1:5 NAb titer	Subjects $\leq$ 1:25 NAb titer	Median titers	Fold difference from control
0.15 mg/kg	22%	67%	1:25	50
0.30 mg/kg	67%	100%	1:5	250

- After Day 30, 2 of 6 subjects treated with 0.3 mg/kg ImmTOR maintained NAb titers  $\leq$ 25, while remaining ImmTOR-treated subjects showed delayed formation of NAb reaching control levels by Day 90
- Animal studies suggest that if NAb are inhibited at Day 30, administration of two additional monthly doses of ImmTOR may maintain control of NAb beyond 90 days
- **Safety findings included AEs previously observed with ImmTOR** (Stomatitis & Rash). Asymptomatic and transient laboratory changes in subjects receiving ImmTOR were seen in 2 subjects with mild to moderate thrombocytopenia and 1 subject with grade 3 hypertriglyceridemia
- This promising study in healthy volunteers **provides support for the potential use of ImmTOR for the inhibition of NAb to AAV8 in gene therapy clinical trials**

## SEL-302 - Gene therapy program for the treatment of MMA

Phase 1 start expected in Q4 2022

- Methylmalonic acidemia (MMA) is a rare monogenic metabolic disease with a potential live birth incidence of between 1:25,000 and 1:48,000<sup>1</sup>
- Majority of patients have mutations in the mitochondrial methylmalonyl-CoA mutase (MUT) gene
- Metabolic instability, particularly in the liver, can cause hyperammonemia and production of other toxic metabolites
- Metabolic crisis can cause irreversible neurocognitive damage, stunted growth, chronic kidney disease and premature death
- Only effective treatment is liver transplantation at an early age
- **Selecta is developing an AAV gene therapy combined with ImmTOR for the treatment of MMA (SEL-302)**





## MMA Clinical Trial Design: Schedule of Events for Individual Subjects





## ImmTOR designed to enhance biologic therapies

Unlocking their full potential by potentially ameliorating unwanted immune responses

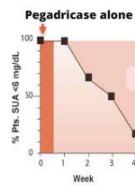


- » Many **biologics can be highly immunogenic resulting in suboptimal responses to the standard of care** due to the development of anti-drug antibodies (ADAs) after multiple treatments
- Patients that develop an immune response to the current standard of care may be forced to discontinue treatment or experience adverse reactions



- » ImmTOR, co-administered with immunogenic therapeutic enzymes, has the potential to ameliorate an immune response to the biologic treatment **allowing patients to stay on therapy longer**
- Extensive human data and significant safety database across multiple biologics demonstrates broad potential applicability and a promising approach **to minimize the healthcare and economic burden of ADAs**

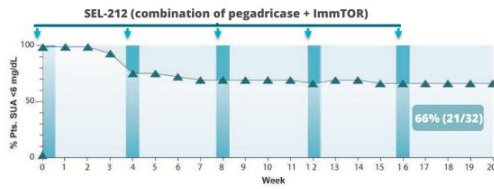
## SEL-212 is a late-stage enzyme therapy program in chronic refractory gout ImmTOR markedly improved patient response to the enzyme pegadricase in a Phase 2 trial



**Pegadricase alone\*\***  
Pegadricase 0.2 or 0.4 mg/kg

Only 15% of patients treated with pegadricase alone maintain control of serum uric acid (SUA) after four weeks of therapy

Pegadricase is a highly immunogenic enzyme with most patients treated with pegadricase alone developing anti-drug antibodies within 2 weeks after a single treatment



**5 monthly doses SEL-212\***  
Pegadricase 0.2 mg/kg  
ImmTOR 0.1 or 0.15 mg/kg

ImmTOR was observed to ameliorate the immune response to pegadricase and was generally well-tolerated resulting in sustained control of serum uric acid (SUA)

## Patients most in need reaped greater benefits with SEL-212

Observed a delta of 19% points for SEL-212 versus pegloticase for patients with visible tophi at baseline

### Patients with tophi at baseline:

- Represent the most severely affected population of gout patients
- Are less likely to achieve target SUA levels on conventional oral lowering therapies and have increased gout-related emergency room visits, hospitalizations, gout-related surgeries, and co-morbidities
- Have increased prevalence of swollen and tender joints and chronic kidney disease
- Have increased risk of mortality

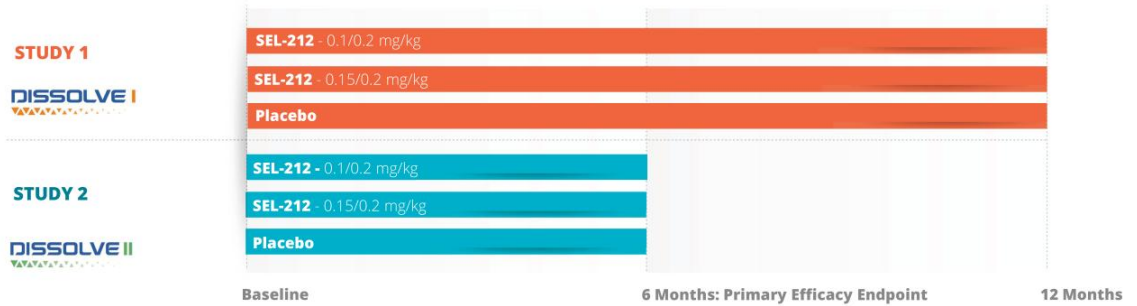
Evaluation Period (Month)	Data Set	SEL-212		pegloticase		Treatment Difference <sup>2</sup> Percentage pts
		n <sup>1</sup>	Responder Percent	n <sup>1</sup>	Responder Percent	
Month 3 and 6 combined	PP	26	58%	26	39%	19
	ITT	35	57%	34	42%	16

1. Number of patients with tophi with Responder Assessment
2. Treatment difference = SEL-212 percent responder - pegloticase percent responder. Rounded to nearest integer

## SEL-212 phase 3 DISSOLVE program design

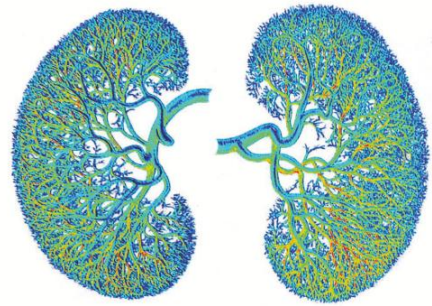
Evaluating SEL-212 in a pivotal phase 3 program vs. placebo, joint topline data expected in Q1 2023

- 2 double blinded placebo-controlled trials of SEL-212 (0.1 mg/kg & 0.15 mg/kg ImmTOR)
  - Both studies have a 6-month primary endpoint of serum uric acid (SUA) < 6 mg/dL at month 6, and DISSOLVE I has a 6-month safety extension; secondary endpoints include tender and swollen joint counts, tophus burden, patient reported outcomes of activity limitation and quality of life and gout flare incidence
- Randomized 1:1:1 against placebo with 265 treated subjects across both studies



## Opportunity to address unmet medical needs for the treatment of IgAN

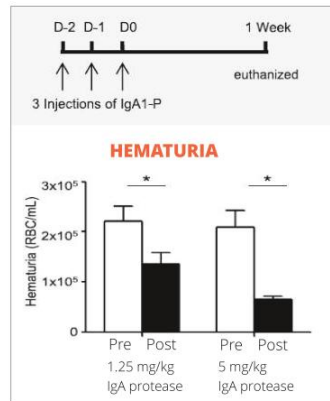
- Immunoglobulin A nephropathy (IgAN) is a leading cause of chronic kidney disease (CKD) and renal failure with 30-40% of patients reaching end-stage renal disease; approximately **100,000 patients in the U.S. and only one approved therapy**
- Caused by **deposits of the protein immunoglobulin A (IgA) inside the filters (glomeruli) in the kidney**
- **Current treatments fail to address the root cause of the disease** and are focused on protecting the kidney from further damage
- Selecta is **developing an entirely new class of IgA protease** from a commensal bacteria in collaboration with IGAN Biosciences for the treatment of IgAN
- Combining **ImmTOR with an IgA protease** has the potential to mitigate the formation of new ADAs and address the underlying pathophysiology of the disease



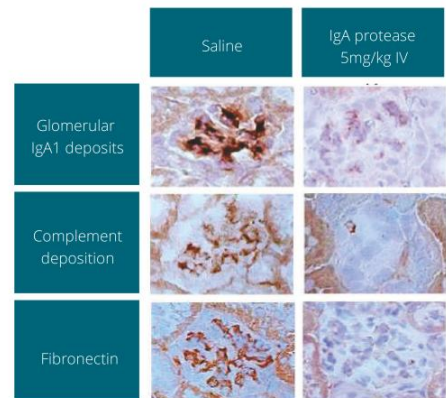
## Combining ImmTOR with IgA protease for the treatment of IgAN

Building on the clinical data from the SEL-212 program and strong preclinical data in IgA

- IND enabling studies underway for next generation Immunoglobulin A (IgA) protease to address IgA nephropathy
- Mice expressing human IgA1 and sCD89 develop spontaneous IgA nephropathy
- Treatment with IgA protease **clears glomerular IgA1 deposits and associated inflammation and hematuria**



Adapted from Lechner et al., *J Am Soc Nephrol*, 2016.







Corporate

## Experienced management team positions Selecta for success



**Carsten Brunn, Ph.D.**  
President and CEO



**Blaine Davis**  
Chief Financial Officer



**Lloyd Johnston, Ph.D.**  
Chief Operations Officer



**Kei Kishimoto, Ph.D.**  
Chief Scientific Officer



**Peter G. Traber, M.D.**  
Chief Medical Officer



**Kristen Baldwin**  
Chief People Officer



**Matthew Bartholomae**  
General Counsel



## Positioned for growth in 2023

**~\$148.0 MILLION<sup>(1)</sup>**

Cash on hand as of September 30, 2022<sup>(2)</sup>



**Current funding expected to extend into mid 2024 and is expected to support anticipated development across pipeline programs including:**

Key 2023 milestones:

- ✓ Licensed next-generation IgG protease candidate, Xork, for development with AT845, Astellas Gene Therapies' investigational product for the treatment of Pompe Disease
- ❑ Report top-line data from Phase 3 DISSOLVE I & II programs of SEL-212 in chronic refractory gout in Q1 2023
- ❑ Preliminary Phase 1 SEL-302 data in gene therapy for MMA
- ❑ Initiate IND enabling studies with the selected IL-2 candidate to further advance and expand the immune tolerance platform in autoimmune disease
- ❑ Initiate IND enabling studies with the selected IgA protease candidate from IGAN Biosciences



1. Unaudited  
2. Includes cash, cash equivalents, marketable securities and restricted cash.

# *Pioneering Precision Immune Tolerance*

1

**ImmTOR® and ImmTOR-IL™ immune tolerance platforms** have potentially broad applicability to address the challenges of **autoimmunity and immunogenicity**

2

**Diversified pipeline** of novel therapeutic candidates; proof of concept in biologics and gene therapy, **expanding into autoimmune disease**

3

**Topline Phase 3 data for SEL-212** in chronic refractory gout expected in **Q1 2023**, with additional value-generating milestones anticipated in 2023

4

**Multiple strategic partnerships** designed to validate platform and maximize its potential

5

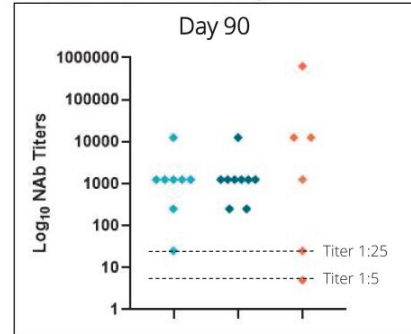
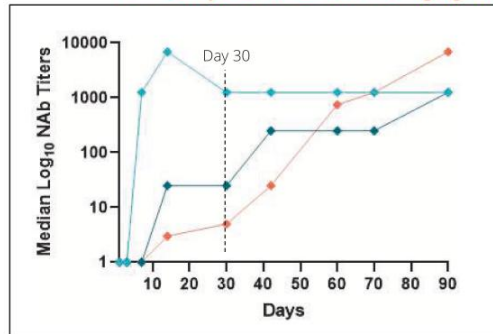
Strong balance sheet, positioned to reach multiple value inflection points with expected **runway into mid-2024**

The image shows a teal-colored header section. On the left side, there are several abstract, light-teal geometric shapes, including a large circle with radiating lines, a smaller circle, and various rectangular and linear elements. The word "Appendix" is written in a white, sans-serif font in the center-right area of this teal section.

Appendix

## Subjects treated with a single dose of ImmTOR developed delayed NAb formation by day 90

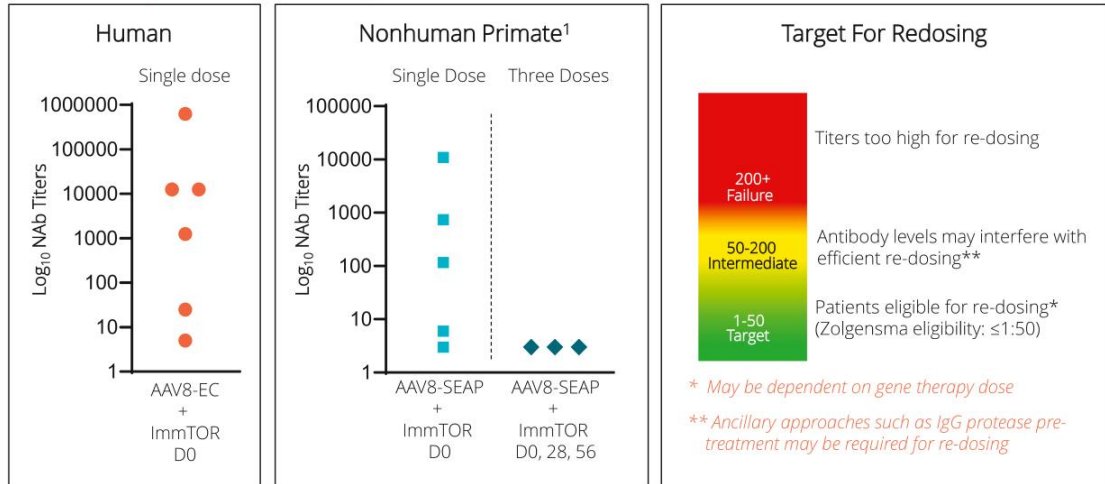
*Additional doses of ImmTOR may be required to maintain control beyond Day 30*  
 2 of 6 subjects dosed with 0.3 mg/kg ImmTOR had NAb titers  $\leq 1:25$  at Day 90  
 1 of 6 subjects dosed with 0.3 mg/kg ImmTOR had NAb titers  $\leq 1:5$  at Day 90



- ◆ Empty Capsid (n=8)
- ◆ Empty Capsid + 0.15 mg/kg ImmTOR (n=9)
- ◆ Empty Capsid + 0.3 mg/kg ImmTOR (n=6)

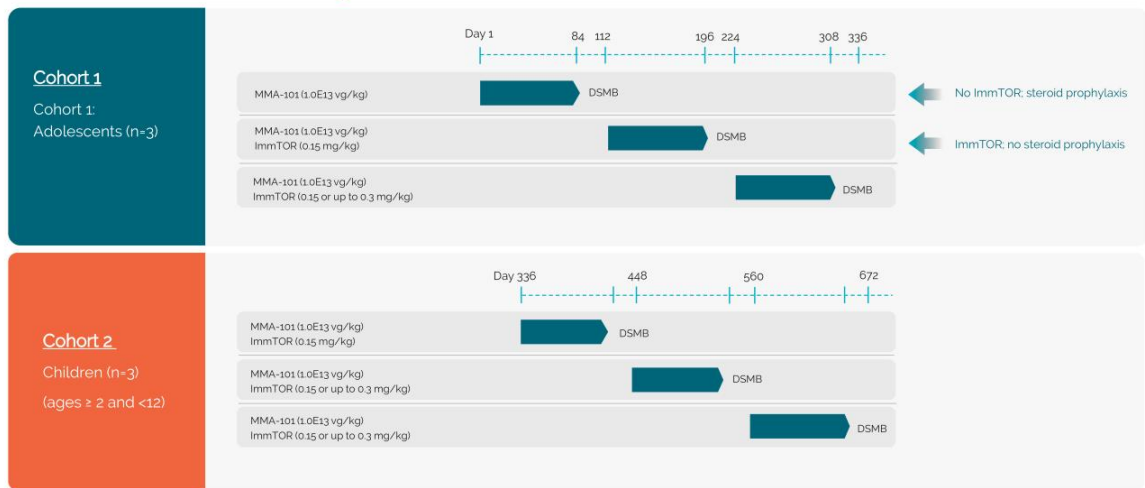
## Empty capsid data in-line with single dose ImmTOR NHP data at day 90

Three monthly doses of ImmTOR provide inhibition of NABs in NHP



1. ESGCT 2021 Poster 003

## MMA Clinical Trial Design: Schedule of Events



Assumes 1 month (28 days) between Day 84 cutoff and subsequent participant enrollment to allow for DSMB report generation and review.



