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An Innovative Platform in Oral, Nasal and Inhalation for Monoclonal Antibody Administration

Proprietary inhalation delivery of anti-IL-6R mAb for COVID-19 treatment

Advanced clinical programs in Crohn's Disease, progressive Multiple Sclerosis, and Hepatocellular Carcinoma

August 2020 Corporate Presentation

https://www.tizianalifesciences.com/

NASDAQ: TLSA AIM: TILS

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KEY MEMBERS OF EXECUTIVE TEAM

Kunwar Shailubhai PhD, MBA
CEO & CSO
Executive Director

- Co-founder , EVP & CSO of Synergy Pharmaceuticals, NASDAQ: SGYP
- Inventor of oral formulation technology
- The pioneer of GC-C agonist technology
- Inventor of TRULANCE® approved for Chronic constipation and IBS-C
- VP, Callisto Pharmaceuticals
- Group Leader, Monsanto Co.

Gabriele Cerrone, MBA
Executive Chairman

- Proven track record & experience in financing biotechnology companies
- Founder and chairman of two biotech companies with market cap over $2 B
- Inhibitex sale $2.5 B
- Synergy / Trovagene / Gensignia / Rasna / Contravir / Siga Technologies
- MBA, Stern School of Business, NY, US.

Key Strengths of the Management Team

- Successful track record in biotechnology 'Bench to Market'
- 3 team members independently brought 3 drugs to market
- Proven industry leadership
- Strong entrepreneurial success in Biotechnology deals

Willy Simon
Non-Executive Director

- Career as an executive in the banking and corporate finance sector and director of publicly listed companies
- Kredietbank N.V., Citibank, Generale Bank NL, CEO of Fortis Investment Management
- Chairman of Bank Oyens & van Eeghen, Partner at Redi & Partners

John Brancaccio
Non-Executive Director

- Over 35 years financial experience in pharma/biotech/medical devices
- Management and SEC reporting
- Private and public fundraising experience
- Greater than 15 years' experience with multiple public companies

SCIENTIFIC ADVISORY COMMITTEE

Howard Weiner, MD

- Professor of Neurology at Harvard Med
- Director and Founder of the Partners MS Center and Co-Director of the Ann Romney Center for Neurologic Diseases
- Pioneered investigation of the mucosal immune system for the treatment of autoimmune and other diseases

Kevin Herold, MD

- Professor of Immunobiology and Medicine and Deputy Director, Yale Center for Clinical Investigation
- Director of the Yale Diabetes Center and Director of the TrialNet Center at Yale
- Expert in autoimmune diseases and anti-CD3 monoclonal antibody therapies

Arun Sanyal MD

- Charles Caravati Distinguished Professor and Chair, Division of Gastroenterology, Hepatology and Nutrition at Virginia Commonwealth University School of Medicine
- Leader in the field of liver diseases

Napoleone Ferrara MD

- Inventor of Avastin® ($6.67Bn/yr)*; 2010 Lasker Award
- Senior Deputy Director Basic Sciences, Moores Cancer Center, UC San Diego
- Distinguished Prof of Pathology, School of Medicine, UC San Diego

Angelo Sangiovanni, MD

- Adjunct Professor of Gastroenterology at the University of Milan
- Leader in liver disease and gastroenterology
- Awarded Best Scientific Publication in clinical Hepatology in Italy

Fabio Piscaglia, MD

- Associate Professor, Medical and Surgical Sciences at the University of Bologna
- Leader in liver diseases and transplantation
- 2017 Winner of a National Institute of Health (NIH) of United States of America grant

Erica Villa, MD

- Professor and Chief GI Unit
- Chairman of the Department of Internal Medicine
- Universitaria di Modena, Policlinico, Modena, Italy
- Leader in Clinical Hepatology and Translational Medicine

INVESTMENT HIGHLIGHTS

- **Transformational platform technologies:** Proprietary oral, nasal and inhaled formulation technologies to transform *immunotherapies with Monoclonal Antibodies ('mAbs')* currently administered intravenously
- **Oral immunotherapy for Crohn's Disease (CD):** Phase 2 clinical study with orally administered Foralumab, a fully human anti-CD3 mAb: ***Anticipated completion date Q3/Q4, 2021***
- **Proprietary Inhalation formulation of fully human anti-IL6 receptor mAb for direct delivery in lungs for treatment of COVID-19 patients:** Lungs are the primary site for COVID-19 infection and progression. Thus, direct delivery of anti-IL6R (TZLS-501) mAb to lungs is expected to provide immediate relief to COVID-19 patients: ***Anticipated IND submission date Q1, 2021***
- **Nasal treatment for progressive multiple sclerosis (pro-MS):** Phase 2 clinical study with nasally administered Foralumab: ***Anticipated completion date Q2, 2021***.
- **Innovative Approach:** Nasally administered Foralumab upregulates T regulatory cells (Tregs) that are capable of crossing '***Blood Brain Barrier***' to suppress inflammation in brain commonly associated with Neurodegenerative diseases such as, ***Multiple Sclerosis, Alzheimer and Lupus (systemic lupus erythematosus)***
- **Broad-spectrum treatment for hepatocellular carcinoma (HCC):** Milciclib, a pan-CDK (cyclin dependent kinase) inhibitor, successfully completed phase 2 clinical trial in advanced HCC patients
- **Orphan Drug Designation for Milciclib:** Granted in US and EU for treatment of thymic carcinoma/thymoma (TC/T)

Foralumab

Oral Trial: FDA approved IND

Phase 1 oral trial completed

Phase 2 oral in CD by Q3/Q4, 2021

Nasal Trial: Phase 2 starting shortly

Phase 1 trial completed

Phase 2 data in pro-MS by Q2, 2021

TZLS-501 (Anti-IL6R)

Inhalant Trial: Preclinical

Trial to commence investigating direct delivery of anti-IL6R mAb to the lungs using a portable inhaler

Milciclib

Orphan Drug Designation: Met primary and secondary endpoints in 2 separate Phase 2 trials in TC/T

Phase 2a in sorafenib-resistant HCC patients completed

Milciclib seems to outperform Standard of care

A REVOLUTIONARY PLATFORM

SWITCH ANTIBODY ADMINSTRATION FROM INTRAVENOUS TO ORAL, NASAL AND INHALED ROUTES

TODAY'S ANTIBODY ADMINISTRATION OPTIONS ARE MOSTLY I.V.

- Costly Infusion
- Poor patient compliance
- Higher toxicity
- Systemic treatment to affect whole body
- Infusion related side effects

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platform enables...

Antibodies (mAbs) reformulated for oral administration

Antibodies (mAbs) reformulated for nasal administration

TZLS- 501 Anti- IL6R- delivery of anti-IL-6R mAb to the lungs using a portable inhaler

THE LARGE MARKET OPPORTUNITY

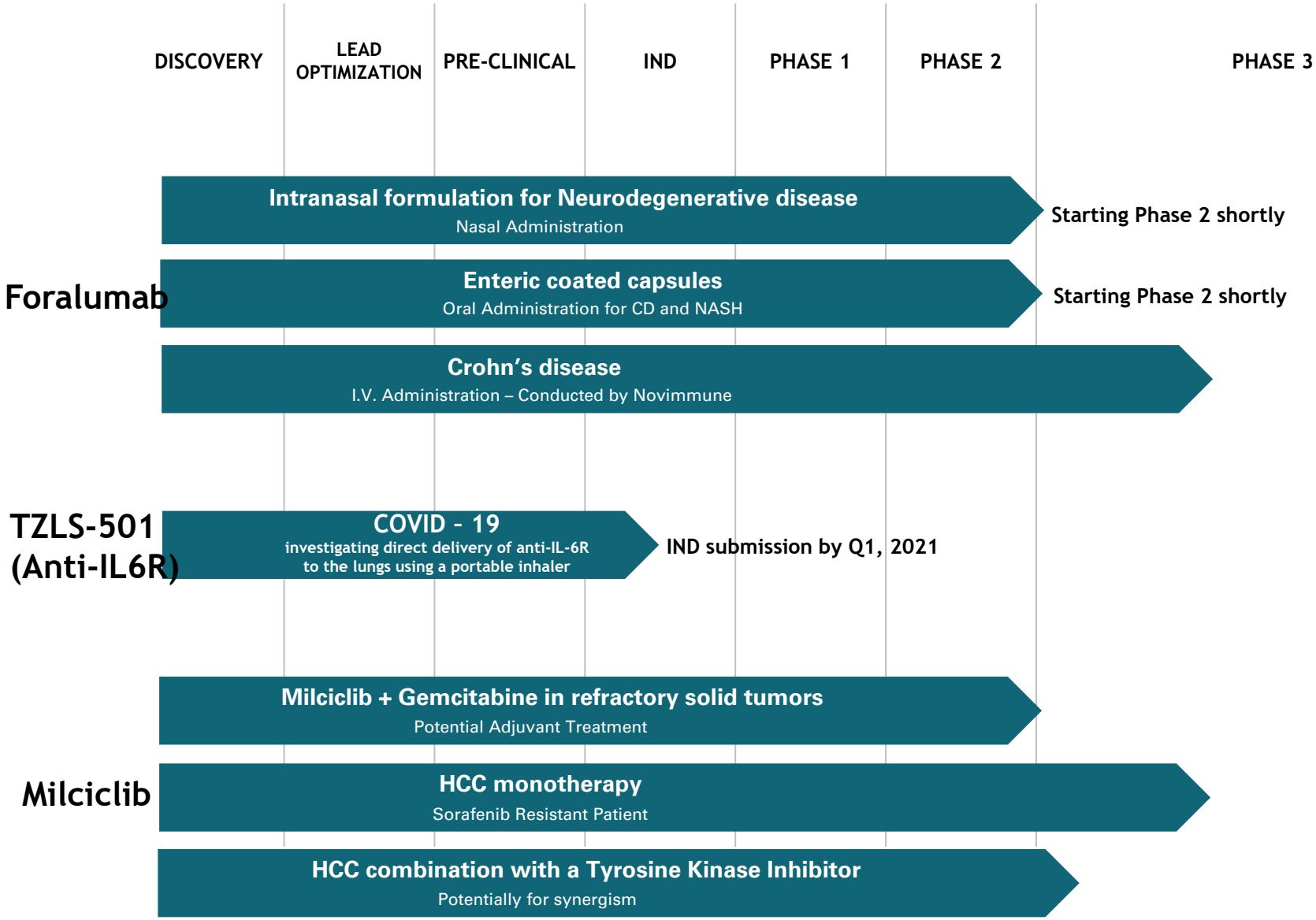
Market opportunity for mAb therapeutics is **greater than**

$ 110 BILLION

PATIENT & PROVIDER BENEFITS

Ease of use
Superior compliance
Topical action in gut
Minimized toxicity
Take home Rx
No costly infusion

DEVELOPMENT PIPELINE



Foralumab

PHASE 2 TO BEGIN
Nasal Trial
Pro-MS

PHASE 2 TO BEGIN
Oral trial in
Crohn's Disease

TZLS-501 (Anti-IL6R)

IND SUBMISSION Q1, 2021
ANTI-IL6R
INHALER

Milciclib

PHASE 2a COMPLETE
HCC Oral Monotherapy

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PLATFORM
TECHOLOGIES

A BIOTECHNOLOGY PLATFORM ENABLING ORAL, NASAL & INHALATION ADMINISTRATION OF MONOCLONAL ANTIBODIES

ORAL ADMINISTRATION

Successfully completed Phase 1 trial with orally administered Foralumab

Phase 2 trial in Crohn's Disease to start shortly

NASAL ADMINISTRATION

Phase 1 trial completed for related neurodegenerative diseases such as Progressive Multiple Sclerosis (Pro-MS)

.

Phase 2 trial in Pro-MS to start shortly.

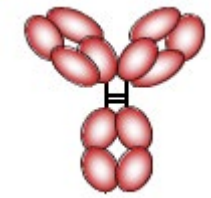
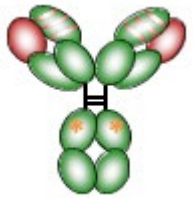
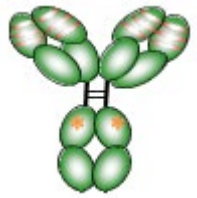
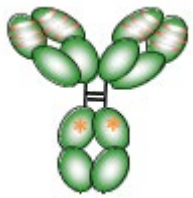
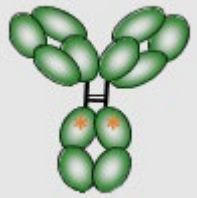
INHALATION ADMINISTRATION

Preclinical Studies Ongoing

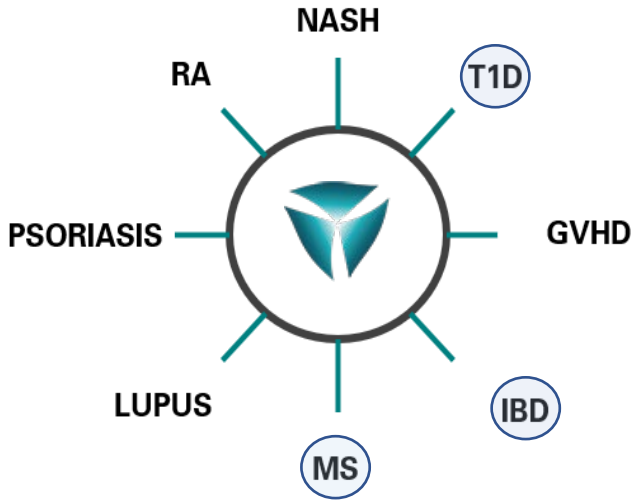
Trial to commence investigating direct delivery of anti-IL6R mAb to the lungs using a portable inhaler

THE ONLY FULLY HUMAN ANTI-CD3 MAB IN CLINICAL TRIALS

CD3-SPECIFIC MONOCLONAL ANTIBODIES IN CLINICAL DEVELOPMENT

OKT3 MUROMONAB	CHAGLYCD3 OTELIXIZUMAB	NUVION VISILIZUMAB	HOKT3γ1(ALA-ALA) TEPLIZUMAB	FORALUMAB
				
IgG2a	IgG1 *Agly	IgG2 *AA	IgG2 *AA	IgG1 *AE
Fully Mouse	Chimeric & Humanized	Humanized	Humanized	Fully Human
Approved by the FDA for solid organ transplantation immuno-suppression				

Oral and Nasal Administration Market Opportunities



Patent application filed on use of Foralumab to enhance CAR-T success

ORAL AND NASAL FORMULATION PATENTS PENDING

Nasal administration of Foralumab

- ✓ Proof-of-concept demonstrated in animal studies
- ✓ Phase 1 study for neurodegenerative diseases at Brigham and Women's Hospital, Harvard Medical School; completed and well-tolerated up to 250 µg
- ✓ Positive Top line data received August 2019, CSR in preparation
- ✓ In-licensed nasal delivery technology from Brigham and Women's Hospital, Harvard Medical School
- ✓ **Targets: Pro-MS and Alzheimer**

Patent covers Foralumab and other mAbs

ANTI-CD3 ANTIBODY FORMULATIONS

GRANTED

Applicant(s): Tiziana Life Sciences PLC
Inventor(s): SHAILUBHAI, Kunwar

US Non-Provisional Patent Application No.:62/380,652, filed August 29, 2016

PCT Application PCT/US2017/049211, filed, Aug 29, 2017

Patent estate

- Exclusive license for composition of matter
- Composition of matter patent for oral and nasal formulation
- Additional patent applications pending
- Oral formulation technology applicable to other mAbs

Targets: Crohn's Disease and NASH

PHASE 1 CLINICAL DATA WITH NASALLY ADMINISTERED FORALUMAB

- Phase 1 trial conducted at Brigham and Women's Hospital completed July 2019
- Dose-ranging, double-blind, placebo-controlled study in healthy subjects
- Foralumab was administered nasally at 10, 50 and 250 µg per day, consecutively for 5 days using a hand-held spray device
- Each dose group consisted of 6 active and 3 placebo

KEY FINDINGS

1. Foralumab was well-tolerated with no drug-related toxicities
2. Immunology marker analysis indicated, that 50-µg dose stimulated the anti-inflammatory cytokine IL-10 and suppressed the pro-inflammatory cytokine IFN-γ
3. Results suggest stimulation of T regs needed for clinical benefits

Tiziana Reports Phase 1 Clinical Data Demonstrating Nasal Treatment with Foralumab was Well-tolerated and Produced Positive Trend in Biomarkers of Immunomodulation and Anti-inflammation in Healthy Volunteers

Published: Sep 10, 2019

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Tiziana Life Sciences Plc (Nasdaq: TLSA) ("Tiziana" or the "Company"), a biotechnology company focused on innovative therapeutics for inflammatory diseases and cancers, is pleased to report Phase 1 clinical data demonstrating that nasally administered Foralumab, a fully human anti-CD3 monoclonal antibody (mAb), was well-tolerated at all doses. Importantly, the treatment showed significant positive effects on the biomarkers for activation of mucosal immunity, which is capable of inducing site-targeted immunomodulation to elicit anti-inflammatory effects. These clinical data are consistent with the findings from numerous pre-clinical studies.[1-3]

This Phase 1 trial, conducted at the Brigham and Women's Hospital, Harvard Medical School, Boston, MA, was a single-site, double-blind, placebo-controlled, dose-ranging study with nasally administered Foralumab at 10, 50 and 250 µg per day, consecutively for 5 days in healthy volunteers for the treatment of progressive multiple sclerosis (pMS). 18 subjects received Foralumab treatment and 9 patient received placebo. All nasal doses were well tolerated. Biomarker analysis showed significant positive immune effects, that were most prominent in the 50 µg cohort with minimal immunomodulatory effects at the 10 µg and 250 µg doses.

Major Highlights

- Treatment was well-tolerated and no drug-related safety issues were reported at any of the doses.
- No drug-related changes were observed in vital signs among subjects at predose, during treatment and at discharge. The mean blood pressure (BP) during the 5 days of treatment were; Cohort A (10 µg/d):124/73, Cohort B (50 µg/d): 119/67 and Cohort C (250 µg/d):113/65 compared to placebo:118/67). Heart rates, respiratory rates and oral temperatures were unchanged among the 3 cohorts compared to the placebo.
- Nasally administered Foralumab at the 50 µg dose suppressed cytotoxic CD8+ as well as perforin secreting CD8+ cells, which have been implicated in neurodegeneration in multiple sclerosis (MS).
- Treatment at 50 µg stimulated production of anti-inflammatory cytokine IL-10 and suppressed production of pro-inflammatory cytokine IFN-γ.
- Taken together, these results suggest stimulation of Tregs that are needed to provide clinical benefit

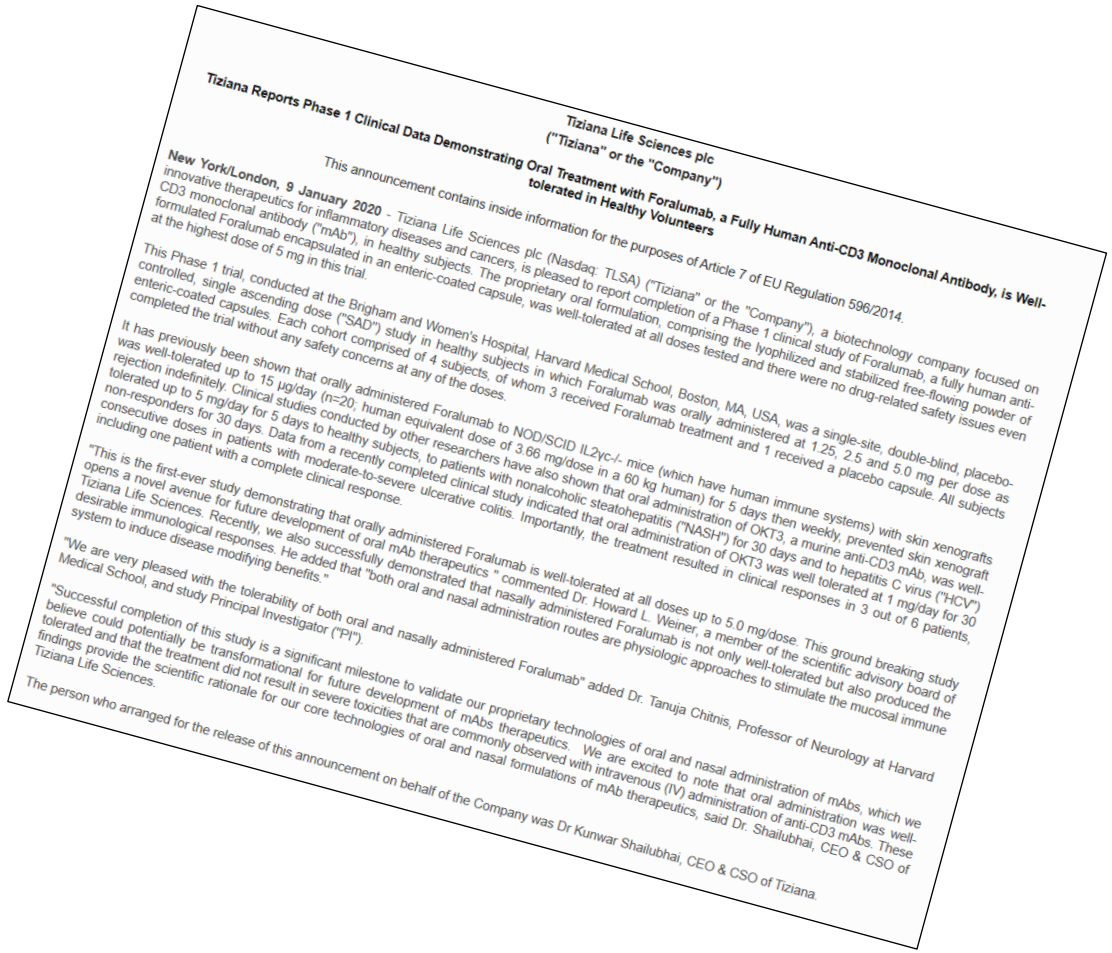
Press Release Reference: https://ir.tizianalifesciences.com/news-releases/news-release-details/tiziana-life-sci-plc-phase-1-clinical-data

PHASE 1 CLINICAL DATA WITH ORALLY ADMINISTERED FORALUMAB

- Phase 1 trial conducted at Brigham and Women's Hospital completed December 2019
- Single ascending dose, double-blind, placebo-controlled study in healthy subjects
- Foralumab administered at 1.25, 2.5 and 5.0 mg/dose as stabilized powder formulation in enteric-coated capsules
- No apparent toxicity up to 5 mg

KEY FINDINGS

1. Well-tolerated at all doses tested
2. No drug-related safety issues observed
3. Toxicities associated with IV administration of anti-CD3 mAbs not observed



Tiziana Life Sciences plc
("Tiziana" or the "Company")

Tiziana Reports Phase 1 Clinical Data Demonstrating Oral Treatment with Foralumab, a Fully Human Anti-CD3 Monoclonal Antibody, is Well-tolerated in Healthy Volunteers

This announcement contains inside information for the purposes of Article 7 of EU Regulation 596/2014.

New York/London, 9 January 2020 - Tiziana Life Sciences plc (Nasdaq: TLSA) ("Tiziana" or the "Company"), a biotechnology company focused on innovative therapeutics for inflammatory diseases and cancers, is pleased to report completion of a Phase 1 clinical study of Foralumab, a fully human anti-CD3 monoclonal antibody ("mAb"), in healthy subjects. The proprietary oral formulation, comprising the lyophilized and stabilized free-flowing powder of formulated Foralumab, encapsulated in an enteric-coated capsule, was well-tolerated at all doses tested and there were no drug-related safety issues even at the highest dose of 5 mg in this trial.

This Phase 1 trial, conducted at the Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA, was a single-site, double-blind, placebo-controlled, single ascending dose ("SAD") study in healthy subjects in which Foralumab was orally administered at 1.25, 2.5 and 5.0 mg per dose as enteric-coated capsules. Each cohort comprised of 4 subjects, of whom 3 received Foralumab treatment and 1 received a placebo capsule. All subjects completed the trial without any safety concerns at any of the doses.

It has previously been shown that orally administered Foralumab to NOD/SCID IL2γc-/- mice (which have human immune systems) with skin xenografts was well-tolerated up to 15 µg/day (n=20; human equivalent dose of 3.66 mg/dose in a 60 kg human) for 5 days then weekly, prevented skin xenograft rejection indefinitely. Clinical studies conducted by other researchers have also shown that oral administration of OKT3, a murine anti-CD3 mAb, was well-tolerated up to 5 mg/day for 5 days to healthy subjects, to patients with nonalcoholic steatohepatitis ("NASH") for 30 days and to hepatitis C virus ("HCV") non-responders for 30 days. Data from a recently completed clinical study indicated that oral administration of OKT3 was well tolerated at 1 mg/day for 30 consecutive doses in patients with moderate-to-severe ulcerative colitis. Importantly, the treatment resulted in clinical responses in 3 out of 6 patients, including one patient with a complete clinical response.

"This is the first-ever study demonstrating that orally administered Foralumab is well-tolerated at all doses up to 5.0 mg/dose. This ground breaking study opens a novel avenue for future development of oral mAb therapeutics," commented Dr. Howard L. Weiner, a member of the scientific advisory board of Tiziana Life Sciences. Recently, we also successfully demonstrated that nasally administered Foralumab is not only well-tolerated but also produced the desirable immunological responses. He added that "both oral and nasal administration routes are physiologic approaches to stimulate the mucosal immune system to induce disease modifying benefits."

"We are very pleased with the tolerability of both oral and nasally administered Foralumab" added Dr. Tanuja Chitnis, Professor of Neurology at Harvard Medical School, and study Principal Investigator ("PI").

"Successful completion of this study is a significant milestone to validate our proprietary technologies of oral and nasal administration of mAbs, which we believe could potentially be transformational for future development of mAbs therapeutics. We are excited to note that oral administration was well-tolerated and that the treatment did not result in severe toxicities that are commonly observed with intravenous (IV) administration of anti-CD3 mAbs. These findings provide the scientific rationale for our core technologies of oral and nasal formulations of mAb therapeutics, said Dr. Shailubhai, CEO & CSO of Tiziana Life Sciences.

The person who arranged for the release of this announcement on behalf of the Company was Dr Kunwar Shailubhai, CEO & CSO of Tiziana.

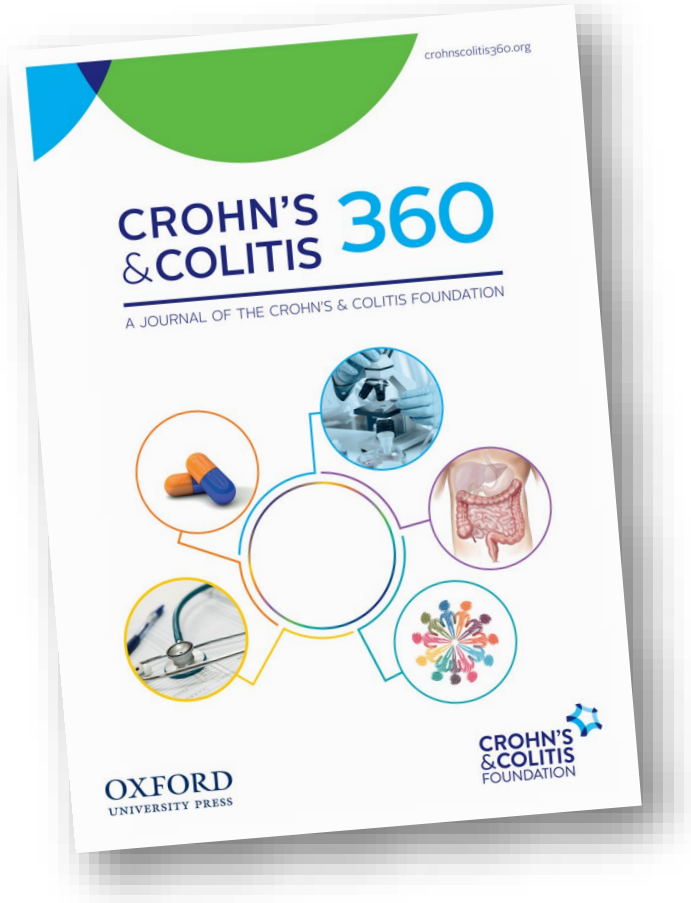
Press Release Reference: https://ir.tizianalifesciences.com/news-releases/news-release-details/tiziana-life-sci-plc-further-re-foralumab-phase-1-trial

THE CONCEPT FOR ORAL ADMINISTRATION WITH ANTI-CD3 MAB IS VALIDATED WITH CLINICAL DATA IN ULCERATIVE COLITIS

- Conducted by Dr. Scott Snapper at Harvard Medical School
- Determined the immunologic effects and safety of orally delivered anti-CD3 antibody in patients with moderate-to-severe ulcerative colitis (UC)
- Six subjects received oral OKT3

KEY FINDINGS

1. The biologic response to treatment with oral anti-CD3 were increased proliferation and anti-inflammatory gene expression profile in peripheral blood mononuclear cells
2. 3 of 6 patients had a clinical response including one patient in clinical remission
3. Treatment was well-tolerated with no serious treatment-related adverse events



* Boden, E. K., Canavan, J. B., Moran, C. J., McCann, K., Dunn, W. A., Farraye, F. A., Ananthakrishnan, A. N., Yajnik, V., Gandhi, R., Nguyen, D. D., Bhan, A. K., Weiner, H. L., Korzenik, J. R., Snapper, S. B. Immunologic alterations associated with oral delivery of anti-CD3 (OKT3) monoclonal antibodies in patients with moderate-to-severe ulcerative colitis. Crohn's & Colitis 360 (2019). 183: 240-246.

PROOF-OF-CONCEPT IN NASH PATIENTS

ORAL TREATMENT WITH MURINE ANTI-CD3 (OKT3) EFFECTIVE IN A PHASE 2 TRIAL WITH NASH[1]

STUDY DESIGN	SAFETY	IMMUNOLOGICAL	EFFICACY BIOMARKERS
▪ 36 subjects with NASH and type II diabetes ▪ Randomized, single-blinded, placebo-controlled ▪ 9 per group, not powered for statistical significance ▪ 0.2, 1.0, 5.0 mg or placebo daily for 30 days ▪ Primary endpoints: safety and trends in immunomodulation ▪ Secondary endpoint: indication or trend of efficacy through biomarkers ▪ Follow up: Days 0, 14, 30, 60 ▪ Hadassah Medical Center, Jerusalem Israel	▪ Well tolerated by all patients in all groups ▪ No systemic drug-related adverse events ▪ No changes in vital signs, serum biochemistry and hematological parameters during treatment or follow-up periods (30-days post-treatment) ▪ No changes in lymphocyte and CD+ cell counts ▪ No changes in weight or BMI or HbA1C lipid GLP-1, or CRP levels in any of the groups	▪ Increases in Treg markers consistent with induction of Tregs ▪ Anti-inflammatory markers ↑ ▪ CD4+CD25+LAP+ Treg cells, TGFβ↑	▪ Positive trends, some of which were statistically significant ▪ AST ↓ – liver enzyme indicating reduced liver inflammation ▪ Glucose ↓ – favorable for subjects with type-2 diabetes ▪ Insulin ↓ – favorable for subjects with type-2 diabetes

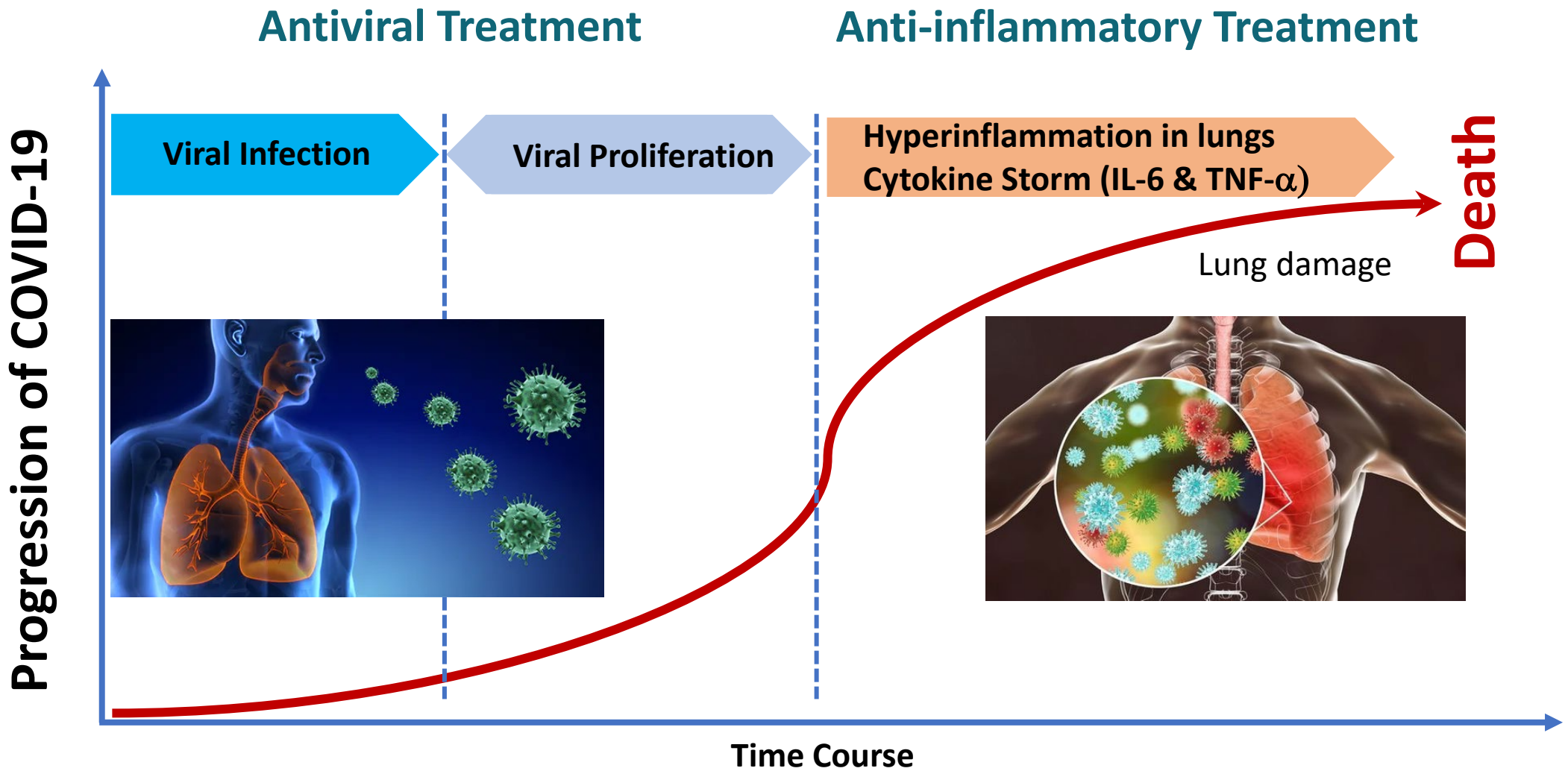
Sources:1) Lalazar, G., Mizrahi, M., Turgeman, I., Adar, T., Ya'Acov, A. B., Shabat, Y., . . . Ilan, Y. (2015). Oral Administration of OKT3 MAb to Patients with NASH, Promotes Regulatory T-cell Induction, and Alleviates Insulin Resistance: Results of a Phase IIa Blinded Placebo-Controlled Trial. Journal of Clinical Immunology, 35(4), 399-407.

PATENT APPLICATION FILED FOR COMPOSITION AND METHOD OF USE OF ANTI-IL-6R MONOCLONAL ANTIBODIES FOR TREATMENT OF COVID-19

Applicant: Tiziana Life Sciences PLC

- Excessive levels of circulating IL6 is the major cause of COVID-19 progression. Thus depletion of circulating IL6 is an attractive approach to provide immediate relief to patients with COVID-19
- TZLS-501 (formerly NI-1201) a fully human anti-IL-6 receptor mAb was acquired from Novimmune in 2017 and currently under license from BMS
- Binds to both the membrane-bound and soluble forms of the IL6R and depletes circulating levels of the IL-6 in the blood
- Anti IL-6R mAb Patent application covers
  - ✓ Use of antibody for immediate treatment of COVID-19 patient
  - ✓ Delivery via aerosol formulation by an inhaler or nebulizer, which can be easy to use for children and elderly people
  - ✓ Administration as aerosol formulation by an inhaler/nebulizer either alone or in combination with intravenous administration
- **Initiate clinical trial in Q1, 2021**

THERAPEUTIC OPTIONS DURING PROGRESSION OF COVID-19



Our patent covers the inhalation delivery anti-IL-6R mAb alone or in combination with Remdesivir

Milciclib

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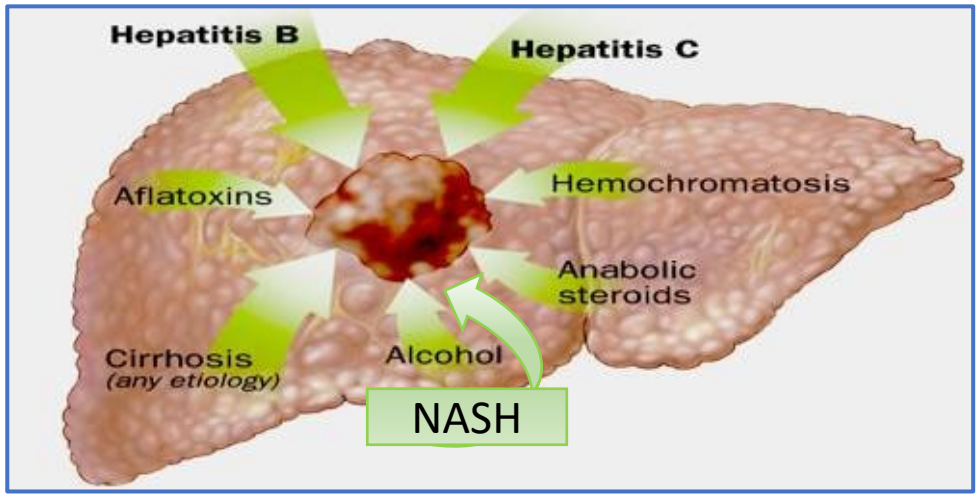
A PAN-CDK INHIBITOR FOR TREATMENT OF HEPATOCELLULAR CARCINOMA AND SOLID TUMORS

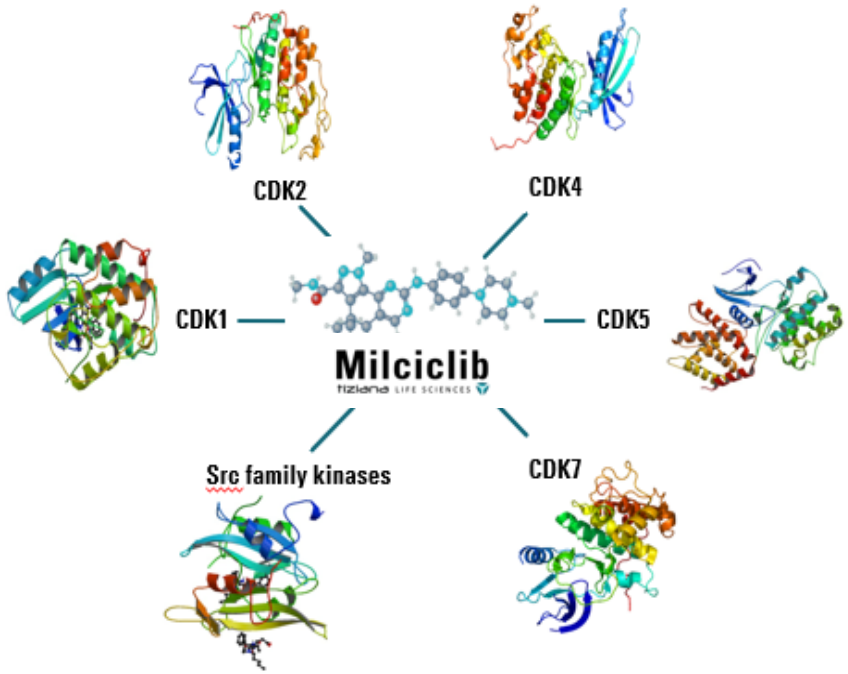
HCC is a complex and heterogenous cancer associated with multiple etiological factors



Newer treatment approach with broad-spectrum action is needed to address heterogeneity of HCC

SMALL MOLECULE PAN-CDK INHIBITOR

- Complex heterogeneity in HCC due to multiple etiological agents; Need for broad-spectrum approach
- Orally-bioavailable small molecule with potent anti-tumor activity in a wide range of animal models
- Inhibitor of kinases associated with cancer cell growth including CDK1, CDK2, CDK4 CDK5, CDK7 and src-family kinases
- Inhibits signaling pathways for hepato-carcinogenesis
- Well tolerated in 316 patients
- Improved toxicity profile over the current standard of care anticipated



A drug with completely differentiated MOA and long-term safety

CLINICAL DATA FROM MILCICLIB

PHASE 2A TRIAL IN SORAFENIB-RESISTANT HCC PATIENTS

Trial design: Oral administration (100 mg/day, consecutive 4 days a week in a 4-week cycle). Total patients 30 to be enrolled. Duration 6 months

Primary end point: safety

Secondary end points: PFS, ORR & TTP

Exploratory: AFP and miRNA profiling

Compassionate use: Upon request of patients with EC approval

Trial complete: Data from 28 out of 31 evaluable sorafenib-resistant HCC patients

- 14 patients completed treatment as per protocol
- Nine approved for compassionate use. Seven patients completed 9, 9, 10, 11, 13, 13 and 16 months, respectively.
- **No drug related deaths in the trial**
- Treatment was well-tolerated
- Adverse events were manageable
- **Time to progression 5.9 months out of 6 months duration of trial**
- **Stabilized Disease (SD) 61%**
- **Clinical Benefit Response 64%**

Two patients currently continuing compassionate use. Ongoing treatment at 19 months.

tiziana
PLATFORM
TECHOLOGIES

Best-in-class genomic signature for prognosis of early and late recurrence of ER+/HER2- breast cancer patients in early stage

- Superior assay based on a stemness signature genes for early prediction of ER+/HER2- recurrence of breast cancer
- Side-by-side comparison study showed StemPrinter assay 40% more accurate then Oncotype DX assay
- This technology will be spin out as a separate publicly listed NewCo (AccuStem Biosciences) shortly.

TWO POSTERS PRESENTED AT ASCO

1. Comparison of StemPrintER, a Novel Biology-based Genomic Predictor of Distant Recurrence in Breast Cancer, with Oncotype DX in the TransATAC cohort, shows that StemPrintER:

- Significantly ($p<0.0001$) stratifies high vs. low risk groups when adjusted for clinical parameters as expressed by clinical treatment scores (CTS)
- Outperforms Oncotype DX in 10-year risk prediction in more than 800 ER+/HER2- postmenopausal breast cancer patients, including lymph node-negative (N0) and 1 to 3 lymph node-positive (N1-3) patients
- Adds more prognostic information than Oncotype DX on the top of clinical parameters as expressed by clinical treatment scores (CTS)

2. Integration of the stem cell biology-based genomic tool, StemPrintER, with clinicopathological parameters for the prediction of distant recurrence in ER+/HER2- breast cancer patients

- Demonstrates that the next-generation StemPrintER Risk Score (SPARE) model is:
  - approximately 20% superior to the traditional clinicopathological parameters, as expressed by the CTS, in providing prognostic information in more than 1,800 ER+/HER2- patients analyzed;
  - up to 40-50% more accurate in lymph node-negative (N0) and 1 to 3 lymph node-positive (N1-3) patients.
- Investigators found that SPARE added substantial prognostic information to CTS, but the inverse was not proven to be the case.

INTELLECTUAL PROPERTY PORTFOLIO

FAMILY	SUBJECT	PRIORITY	STATUS	EXPIRES	JURISDICTION
Foralumab	Methods of Use (Autoimmune or Inflammatory diseases and disorders)	2004	Issued	2025	Australia, Canada, China, Hong Kong, Israel, Japan, Mexico, Norway, Singapore, South Africa, Ukraine, Armenia, Austria, Azerbaijan, Belgium, Belarus, Switzerland, Germany, Denmark, Spain, France, United Kingdom, Ireland, Italy, Kyrgyzstan, Kazakhstan, Luxembourg, Moldova, Netherlands, Portugal, Russian Federation, Sweden, Tajikistan, Turkmenistan,
	Composition and Methods of Use	2004	Issued/ Pending	2025	US, Armenia, Australia, Austria, Azerbaijan, Belarus, Brazil, Canada, China, Denmark, France, Germany, Hong Kong, India, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Mexico, Moldova, Netherlands, Norway, Republic of Korea, Russian Federation, Singapore, South Africa, Spain, Switzerland, Tajikistan, Turkmenistan, and Ukraine Pending: Japan (divisional), Singapore (divisional), US (divisional)
TZLS-401	Methods of Use (In combination with anti-IL-6/IL-6R antibodies)	2011	Pending	2032	US
	Formulations and dosing regimen	2016	Issued/Pending	2037	US Pending: Australia, Canada, China, Europe, Hong Kong, Israel, Japan
	Methods of Use (CNS disorders)	2017	Pending	2038	National
	Methods of Use (gastrointestinal/autoimmune/inflammatory)	2018	Pending	2039	PCT
	Composition and Methods of Use (CAR-T cell therapies)	2020	Pending		US Provisional
Milciclib	Composition of matter, methods of use, process of manufacturing	2003	Issued/ Pending	2024	US, Europe, Eurasia, Africa, Algeria, Argentina, Australia, Barbados, Bosnia & Herzegovina, Canada, Colombia, Costa Rica, Croatia, Cuba, Ecuador, Georgia, Iceland, India, Indonesia, Israel, Japan, Korea, Kosovo, Malaysia, Mexico, Mongolia, Montenegro, New Zealand, Nicaragua, Norway, Pakistan, Philippines, Serbia, Singapore, South Africa, Sri Lanka, Taiwan, Tunisia, Ukraine, Uzbekistan, Vietnam. Pending: US, Brazil, Egypt, Thailand, Trinidad & Tobago, Venezuela
TZLS-201	Methods of use (multiple indications)	2008; 2009	Issued	2029; 2030	US, EU, China, Hong Kong, Japan
	Methods of use (combination therapies with cytotoxics)	2008; 2009	Issued	2029; 2030	US, EU, China, Hong Kong, Japan
	Compositions of related entities, formulations and methods of treatment	2009	Issued	2030	US, EU, China, Hong Kong, Japan
	Methods of use (combination therapies with therapeutic antibodies)	2006	Issued	2027	US, EU, China, Japan
	Formulations of Milciclib and therapeutic combinations of the same for use in the treatment of cancer	2017	Pending	2038	US, PCT
TZLS-501 (Anti-IL6R)	Composition of Matter and Methods of use	2009	Issued/ Pending	2029	US, Austria, Australia, Belgium, Canada, China, Denmark, France, Germany, India, Ireland, Italy, Japan Luxembourg, Mexico, Netherland, Spain, Sweden, Switzerland and UK. Pending: US (divisional), Japan (divisional)
	Composition of Matter and Methods of use (Inhalation)	2020	Pending		US Provisional

UPCOMING CATALYSTS

PRODUCT	ACTION/OBJECTIVE	TARGET DATE
Foralumab	Phase 2 trial with orally administered Foralumab in Crohn's Disease patients anticipated completion - INITIATION OF THE STUDY (Q3, 2020) - INTERIM ANALYSIS OF CLINICAL DATA (Q1, 2021)	**Q3/Q4, 2021**
Foralumab	Phase 2 trial with nasally administered Foralumab in progressive multiple sclerosis (pro-MS) patients anticipated completion - INITIATION OF THE STUDY (Q3, 2020) - INTERIM ANALYSIS OF CLINICAL DATA (Q4, 2020)	**Q2, 2021**
TZLS-501 (Anti-IL6R)	Development of inhalation technology to deliver stable aerosols directly in lungs (IND SUBMISSION) - INHALATION TECHNOLOGY DEVELOPMENT (Q4, 2020) - COMPLETION OF INHALATION TOXICOLOGY IN MONKEYS (Q1, 2021)	**Q2, 2021**
Milciclib	Initiate Phase 2b in HCC patients with Milciclib in combination with a TKI.	**Q2, 2021**

GROWTH OBJECTIVES

CAPITAL STRUCTURE

	TILS Ordinary Shares	TLSA ADS
• Issued share capital	190,559,823	95,279,912
• Warrants (WAEP: £1.23)	2,413,268	1,206,634
• Options (WAEP: £0.37)	18,279,403	9,139,702
Fully Diluted Shares	**211,252,494**	**105,626,248**

*Information prepared as of 5 August 2020. 1 ADS represents 2 ordinary shares.

FINANCING OBJECTIVES

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CLINICAL DATA SUGGEST MILCICLIB OVERCOMES GEMCITABINE RESISTANCE

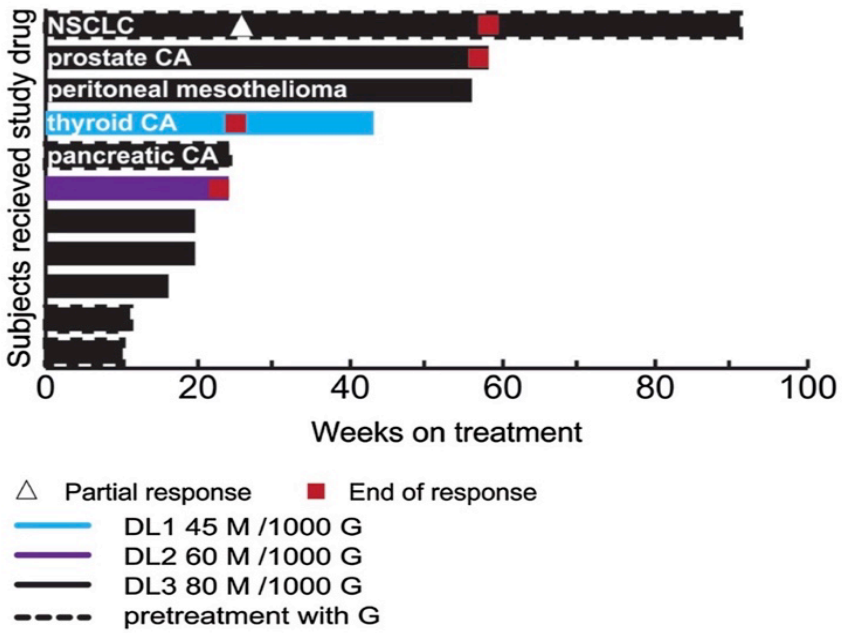
PATIENTS RAPIDLY ACQUIRE RESISTANCE TOWARDS CHEMOTHERAPIES

KEY FINDINGS FROM PHASE 1 STUDY

1. Milciclib well-tolerated with manageable side effects in patients with refractory solid tumors
2. Oral treatment in combination with gemcitabine demonstrated clinical activity in patients who were non-responder to existing chemotherapeutic drugs
3. Recommended Phase 2 dose (RPD) found to be 80mg/m^2/day for milciclib and 1000mg/m^2/day for gemcitabine
4. Overall response rate was 36%
5. Results suggest further evaluation in other solid cancers either as monotherapy or combo-therapy

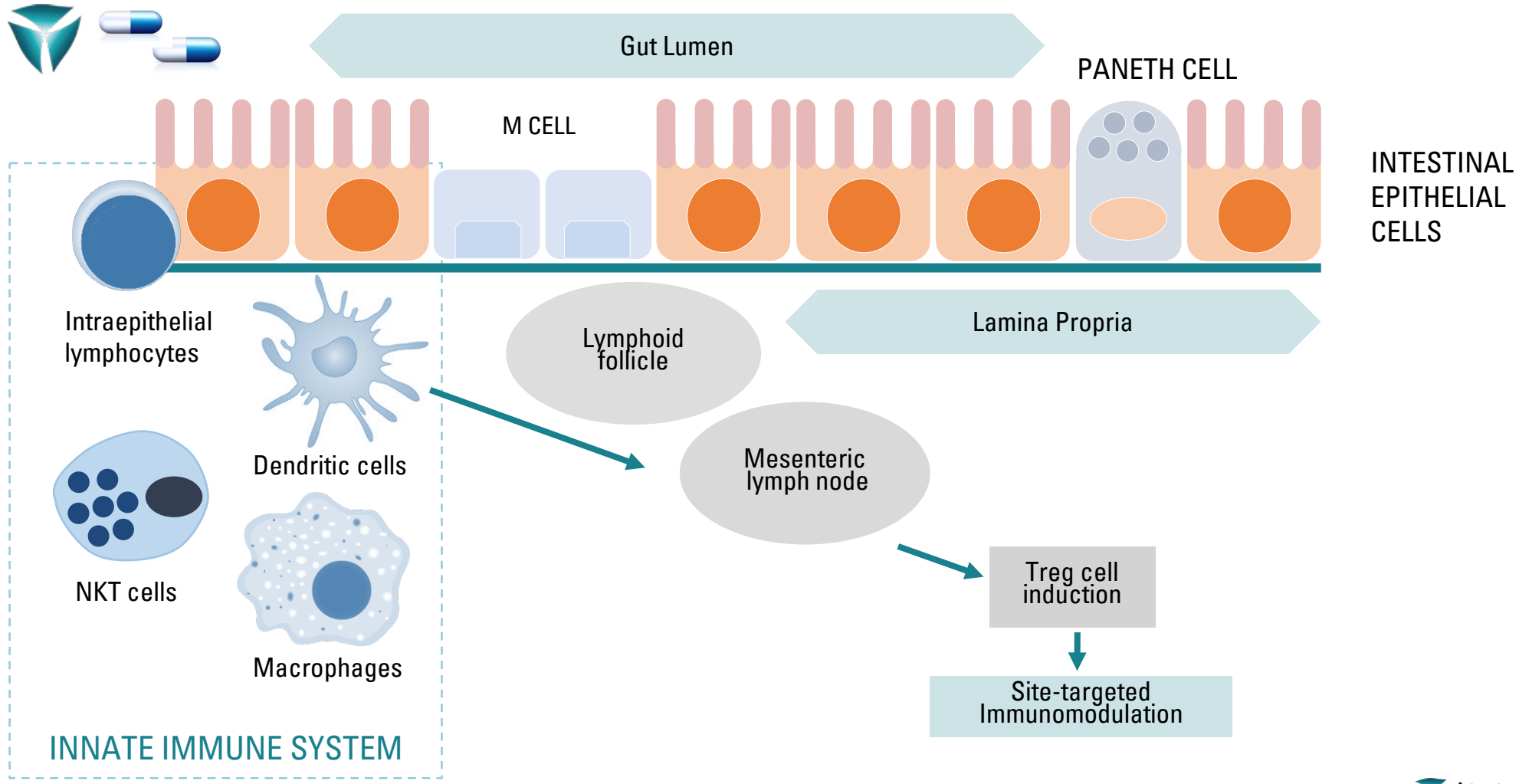
Phase 1 Dose-Escalation Study of Milciclib in Combination with Gemcitabine in Patients with Refractory Solid Tumors*

Sandrine Aspeslagh[1] · Kunwar Shailubhai[2] · Rastilav Bahleda[1] · Anas Gazzah[1] · Andréa Varga[1] · Antoine Hollebecque[1] · Christophe Massard[1] · Anna Spreafico[3] · Michele Reni[3] · Jean-Charles Soria[1]



Swimmerplot showing treatment duration. Tumor type was indicated for patients having a prolonged stable disease or a partial response. M Milciclib; G gemcitabine.

* Cancer Chemotherapy and Pharmacology, June 2017, 79(6), 1257-1265

HOW DOES OUR PLATFORM TECHNOLOGY WORK?

NOVEL APPROACH FOR SITE-TARGETED IMMUNOMODULATION