

July 12, 2019

Dear Fellow Shareholders,

Over the course of 2018 and first half of 2019, OncoSec made significant progress advancing its core technology platform – TAVO<sup>™</sup> (intratumoral IL-12) – across multiple cancer indications while positioning itself to continue to innovate through a series of new strategic collaborations that both leverage and enhance the company’s existing pipeline assets. Before reviewing these accomplishments, I wish to thank the patients in our clinical trials, their caregivers, our shareholders and our employees, whose steadfast dedication towards improving human health is inspiring. Through their efforts and those of our partners, we have generated a growing body of clinical evidence to support the broad therapeutic potential of TAVO<sup>™</sup> in some of the most aggressive and refractory forms of cancer.

### **Clinical Achievements and Milestones**

During 2018, we provided important clinical data updates from our diverse clinical pipeline utilizing TAVO<sup>™</sup> as a potential treatment for multiple solid tumor types in patients who are refractory to immune checkpoint inhibitors as a monotherapy.

Most recently, we announced positive response data from the KEYNOTE-890 study, an on-going Phase 2 study of TAVO<sup>™</sup> in combination with Merck’s KEYTRUDA<sup>®</sup> (pembrolizumab) in patients with heavily pretreated, chemotherapy-refractory, metastatic triple negative breast cancer (TNBC). We continue to be very encouraged by the tumor response data emerging from this on-going open label study, especially considering that these patients did not receive any meaningful benefit following several prior rounds of chemotherapy or radiation. Further, as we have already seen in numerous other clinical trials, the safety profile for TAVO<sup>™</sup> continues to be exceptional, which we attribute to its localized, intratumoral-based delivery that naturally avoids the common toxicities associated with systemic-based drug delivery. We are highly enthusiastic about our TNBC program and expect the study to be fully enrolled by the fourth quarter of this year. Importantly, we expect to provide additional preliminary tumor response data at the San Antonio Breast Cancer Conference in December.

Building on our TNBC program, in the second quarter of 2019 we announced a preclinical collaborative research agreement with the Duke University School of Medicine to evaluate the use of our proprietary TAVO-PLUS (enhanced IL-12 DNA-plasmid) in combination or sequenced with a HER2-plasmid vaccine (HER2+) administered with our new, enhanced electroporation generator, APOLLO<sup>™</sup>. While many of our oncology programs focus on more advanced/refractory conditions, we believe this HER2+ program will provide valuable data and insights towards assessing the potential of our technology for treating earlier-stage disease and in patients with resectable HER2+ positive breast cancer, which is newly diagnosed in half a million women annually, nearly all of whom will have easily injectable disease at diagnosis.

Our registration-enabled KEYNOTE-695 study in metastatic melanoma is continuing to enroll and we plan to reach full enrollment by year-end. Earlier this year, we provided an update on the KEYNOTE-695 study, which is a global, multicenter, Phase 2b open-label trial of TAVO<sup>™</sup> in combination with KEYTRUDA<sup>®</sup> in patients with unresectable, advanced melanoma. To date, the response rates from this study have far exceeded the single digit response rates expected with KEYTRUDA<sup>®</sup> alone in this salvage setting. We find this particularly encouraging given that enrollment eligibility is limited to only those patients who have refractory, locally advanced or metastatic disease defined as unresectable Stage III/IV metastatic melanoma who have definitively progressed by RECIST V1.1 following a full-course of anti-PD-1 treatment

with KEYTRUDA® or OPDIVO®. This study continues to enroll and based upon the outcome of the study, we could file for accelerated approval in 2020.

In addition to the FDA Fast Track Designation of TAVO™ in the United States, we announced in the second quarter of this year that TAVO™ has received Advanced Therapy Medicinal Product (ATMP) classification as a potential treatment for refractory metastatic melanoma from the European Medicines Agency (EMA). The classification of TAVO™ as an ATMP is a significant step toward its potential accelerated approval in Europe.

### **Pipeline Advancements**

We are building upon our IL-12 delivery expertise to advance even more powerful anti-cancer drug candidates into the clinical testing. At the 2019 American Association for Cancer Research (AACR) meeting, for example, we released promising preclinical data for our new product candidate, SPARK™, which in addition to having an enhanced version of IL-12, incorporates two novel genes, CXCL9 and aCD3. The sequenced addition of these two genes effectively amplifies the power of the IL-12 and, in our preclinical testing, leads to even higher levels of T cell recruitment and activity within the tumor's microenvironment. SPARK™ is also being delivered using our enhanced electroporation system (APOLLO™), resulting in higher transfection rates of these therapeutic genes within the tumor. Based upon strong data seen in challenging preclinical tumor models, we anticipate filing an Investigational New Drug Application (IND) with the FDA in 2020.

### **APOLLO™ and Visceral Lesion Applicator (VLA)**

Our proprietary, intratumoral gene delivery system has demonstrated the potential to become a foundational technology in the treatment of earlier-stage, localized malignancies. With our new electroporation generator, APOLLO™, an optimal balance of lower voltage and longer pulse duration is now being delivered to significantly increase DNA-plasmid cellular transfection rates.

Importantly, APOLLO™ is now being paired with our new Visceral Lesion Applicator (VLA), which enables much deeper delivery of therapeutic genes into visceral lesions like those seen in hepatocellular carcinoma (HCC), pancreatic, lung and gastrointestinal-based cancers. Moving forward, we see significant opportunity to leverage this innovative technology to secure new partnerships that allow us to expand our capabilities and drive shareholder value.

### **Collaboration with the Dana-Farber Cancer Institute**

We recently announced a very exciting collaboration with the Dana-Farber Cancer Institute and The Marasco Laboratory to develop CAR T-cell therapies for the treatment of solid tumor cancers. The collaboration will initially focus on CAR T-cell therapy for TNBC – both as a monotherapy and in combination with TAVO™ (IL-12).

Under the terms of the agreement, we acquired an exclusive option to licensing rights to the CAR T-cell product candidates and associated IP resulting from the research being conducted at The Marasco Laboratory. Dr. Marasco is a leading monoclonal antibody engineering expert who has designed a proprietary dual-targeted bi-specific CAR T-cell approach. Dr. Marasco's approach has shown potential to be effective against numerous solid tumor indications while minimizing the toxicity that current CAR T-cell technologies exhibit when applied beyond liquid tumor indications.

This collaboration gives us the opportunity to own multiple product candidates in CAR T-cell therapy and build a second platform that leverages our existing pipeline and core TAVO™ technology. CAR T-cell

therapies have demonstrated meaningful clinical results but are vulnerable to the immunoregulatory mechanisms found in the tumor microenvironment. As we've seen already in combination with checkpoint inhibitors, intratumoral IL-12 promotes activation and expansion of tumor-infiltrating lymphocytes while globally enhancing immunogenicity, both of which support CAR T-cell therapies and provide a rationale for this combination.

We view this as an opportunistic move with minimal financial risk and significant upside potential for OncoSec shareholders. In order to obtain these rights, our initial financial support for this collaboration was \$1 million. We do not have any further obligations to financially support the collaboration for several months, during which time we expect to see significant value-enhancing progress on this project which could justify further financial support. If we do not see such progress, our agreement provides us with the flexibility to cease our financial support for the collaboration.

### **Collaboration with Emerge Health Pty**

We believe our agreement with Emerge Health Pty to provide special early access to TAVO™ for advanced-stage, melanoma patients is an important inflection point for our company. Emerge is the leading Australian company providing Special Access Scheme (SAS), full registration, and sales, marketing and distribution services of therapeutic products in Australia. Under this agreement, the SAS program effectively allows up to 1,000 Australian melanoma patients access to OncoSec's TAVO™ beginning as early as 4Q 2019, enabling access to TAVO™ at commercial reimbursement rates prior to formal approval by Australian regulatory authorities. In addition to accelerating our commercial plans, the agreement also provides clear recognition of our drug's therapeutic potential, as TAVO™ will be the only drug available under the SAS program for melanoma patients who have failed checkpoint therapy.

### **TAVO Early Access – A Patient Case Study**

To underscore the importance of early access, we consider the remarkable case study of a patient first diagnosed with metastatic melanoma that was negative for BRAF, Kit, and NRAS mutations (so targeted therapy was not an option) and resistant to aggressive combination checkpoint therapy with OPDIVO® (nivolumab) plus YERVOY® (ipilimumab). The patient had not only in-transit metastases in the skin, but also extensive distant metastasis in the brain, liver, lung, and numerous lymph nodes throughout the body. Further complicating the matter, the patient also suffered from rheumatoid arthritis, which rendered her ineligible for participation in clinical trials. Her in-transit recurrence became severely symptomatic and she tried and failed Talimogene Laherparepvec (T-VEC) therapy. Palliative whole brain radiation was used to control the brain metastases, although the clinical benefits of this treatment were expected to be limited.

Eventually, FDA approval for expanded access use of TAVO™ + Pembrolizumab was sought by the patient's oncologist and subsequently obtained. Two in-transit lesions were treated in the left groin with TAVO™ by direct injection and then electroporated in concert with KEYTRUDA® (pembrolizumab). After just one treatment cycle, the patient demonstrated a complete response of the two lesions treated with TAVO™, her lung lesion resolved, and her liver lesion were substantially smaller. After the second treatment cycle, the brain and many lymph node metastases showed complete resolution, and the liver mass decreased in volume by 96%. The treatment will continue until disease progression is observed or complete disease resolution is achieved.

We highlight this remarkable case study for two reasons. First, it further demonstrates the power of TAVO™ in combination with KEYTRUDA® in a patient who has unfortunately not received a benefit from all available checkpoint therapies and T-VEC. For most providers, seeing is believing, and, based on this

doctor's experience in treating this patient with TAVO™, her oncologist has now become an investigative site on KEYNOTE-695 and is actively enrolling patients. Second, this case is remarkable because it shows the importance of empowering cancer patients to gain early access to promising experimental therapies such as TAVO™. At OncoSec, we are constantly working to develop relationships with regulatory authorities and other entities that can facilitate early access for patients, and our new relationship with Emerge Health clearly reflects these efforts.

### **Collaboration with UCSF Helen Diller Family Comprehensive Cancer Center**

In the second quarter of 2019, the UCSF Helen Diller Family Comprehensive Cancer Center initiated a triple combination clinical trial of TAVO™, epacadostat, and KEYTRUDA® in patients with squamous cell carcinoma head and neck (SCCHN) cancer. The ongoing "TRIFECTA" study is a single-arm open-label clinical trial expected to enroll approximately 35 patients. TRIFECTA is an investigator-initiated clinical trial by UCSF otolaryngologist, Dr. Chase Heaton, to determine whether the triple combination can increase the overall response rate in SCCHN compared with historical data for KEYTRUDA® as a monotherapy. The costs of this clinical trial require minimal financial commitment from OncoSec.

### **Other Corporate Developments**

We were pleased to announce that OncoSec secured exclusive worldwide rights to Gaeta Therapeutics' broad portfolio of patents and applications covering the combination use of IL-12 DNA and various checkpoint inhibitor therapies, including anti-CTLA-4 and anti-PD-1 compounds, in key global markets. Securing a broad spectrum of IP rights is an absolute necessity for long-term commercial success, and this license will further strengthen an already robust IP estate for our IL-12 cancer programs.

We also raised approximately \$11 million in a secondary offering. At the closing of this transaction, OncoSec's pro forma unaudited cash, cash equivalent and investment balance exceeded \$30 million with no debt. The proceeds of the offering are expected to fund OncoSec's clinical research and development activities and its working capital and general corporate purposes. We are extremely pleased to welcome aboard our new investors, who we can attest are both highly sophisticated in the life sciences and take a long-term view towards their portfolio holdings. We also announced the termination of our at-the-market (ATM) agreement with Cantor Fitzgerald and the equity facility with Aspire Capital.

### **Moving Forward**

While we made substantial progress throughout 2018 and first half of 2019, I would be remiss in failing to mention that a highly volatile equity market in the fourth quarter of 2018 clearly depressed the valuations for many small-cap biotechnology companies, and OncoSec stock was no exception to this dynamic. That said, I believe there is a striking disconnect between our substantial accomplishments and future opportunities, versus where the company is presently being valued in the market. We are working diligently every day to improve our communications to the investment community so that our valuation more closely reflects the substantial progress we've achieved to date, and the opportunities that we have created and lie ahead for us.

We have submitted two important proposals in the Proxy that we believe serve the best interest of all OncoSec stakeholders. This is an exciting and critical period for OncoSec and we feel these measures are prudent for good corporate planning to advance the business.

Specifically, the first proposal to increase the number of authorized shares of common stock from 16,000,000 to 45,000,000 is part of good corporate capital planning. This is intended to give us greater flexibility in considering and planning for future general corporate needs, including potential strategic and

business development transactions. While we are always looking for the best options to finance the company, there are currently no plans, arrangements, commitments or understandings for the issuance of the additional shares of common stock which are proposed to be authorized.

The second proposal to authorize the issuance of up to 5,000,000 shares of blank preferred common stock is intended to protect OncoSec from persons seeking to take control of the company through a tender offer, proxy fight or otherwise. I can assure you that the Board and I remain open and committed to evaluating any and all strategic opportunities that properly value our assets and align with the interest of OncoSec stakeholders.

Thank you for your consideration of these proposals. I ask that you vote in favor of both.

For OncoSec investors, we believe the value proposition has never been more attractive. The company is now positioned to begin generating revenue as early as 4Q 2019 thanks to its our deal with Emerge Health. OncoSec is also one of very few micro-cap biotechnology companies that can boast of having two KEYNOTE studies firmly underway, one of which is registration-directed (melanoma), highly encouraging response data now being seen in TNBC, a proven and cutting-edge gene delivery technology platform which we anticipate will lead to multiple partnership opportunities, and finally, a strong balance sheet that will accelerate our internal pipeline development while providing negotiating strength as we enter into partnership discussions. In sum, I believe OncoSec is exceptionally well positioned over the next 12-18 months.

On behalf of OncoSec's Board of Directors and its dedicated employees, I want to thank our shareholders for your continued support and encouragement as we strive to bring significant advancements to patients who are struggling in their battle against cancer. We look forward to announcing additional updates on our key clinical programs and technology partnering opportunities throughout 2019.

Very truly yours,



Daniel J. O'Connor  
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OncoSec Medical Incorporated