ITEM 7 - MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This discussion contains forward-looking statements that involve risks and uncertainties. When reviewing the discussion below, you should keep in mind the substantial risks and uncertainties that impact our business. In particular, we encourage you to review the risks and uncertainties described in "Risk Factors" in Part I, Item 1A in this Annual Report on Form 10-K. These risks and uncertainties could cause actual results to differ materially from those projected or implied by our forward-looking statements contained in this report. These forward-looking statements are made as of the date of this management's discussion and analysis, and we do not intend, and do not assume any obligation, to update these forward-looking statements, except as required by law.

All amounts are expressed in United States dollars unless otherwise stated.

OVERVIEW

Aptose is a science-driven biotechnology company advancing first-in-class targeted agents to treat life-threatening cancers, such as AML, high-risk MDS, CLL and other hematologic malignancies. Based on insights into the genetic and epigenetic profiles of certain cancers and patient populations, Aptose is building a pipeline of novel oncology therapies directed at dysregulated processes and signaling pathways. Aptose is developing targeted medicines for precision treatment of these diseases to optimize efficacy and quality of life by minimizing the side effects associated with conventional therapies. We currently have in development two molecules: luxeptinib (CG-806) and APTO-253, both being evaluated for safety, tolerability, pharmacokinetics and signals of efficacy in Phase 1 clinical trials. Each molecule is described below.

Luxeptinib is an orally administered, highly potent first-in-class FLT3/BTK inhibitor that selectively targets defined clusters of kinases that are operative in hematologic malignancies. This mutationally agnostic small molecule anticancer agent is currently being evaluated in a Phase 1a/b study for the treatment of patients having B-cell malignancies including classic CLL, SLL and certain NHL that are resistant/refractory/intolerant to other therapies. In addition, Aptose received IND allowance and initiated patient dosing in a Phase 1a/b study to develop luxeptinib for the treatment of patients with R/R AML, including the emerging populations resistant to FLT3 inhibitors. In this trial of patients with R/R AML, the luxeptinib starting dose of 450 mg BID was selected because the plasma from B-cell cancer patients at that dose completely inhibited phospho-FLT3, suggesting that this starting dose might be active in the AML patient population, and that dose escalation is planned to identify an optimal dose for treating a breadth of AML patients. It is important to note that luxeptinib now is undergoing formal clinical development in both lymphoid and myeloid hematologic malignancies.

APTO-253 is a first-in-class small molecule therapeutic agent that clinically inhibits expression of the MYC oncogene without causing, to date, general myelosuppression of the bone marrow. The MYC oncogene is overexpressed across many hematologic cancers, including AML and certain B cell malignancies, as well as certain solid tumor indications. MYC acts as a transcription factor that regulates cell growth, proliferation, differentiation and apoptosis, and overexpression of MYC amplifies new sets of genes to promote survival of cancer cells. APTO-253 suppresses expression of the MYC oncogene in AML cells and depletes those cells of the MYC oncoprotein, leading to apoptotic cell death. APTO-253 is currently being evaluated in a Phase 1a/b study for the treatment of patients with R/R AML and high-risk MDS. APTO-253 may serve as a safe and effective MYC inhibitor for AML/MDS patients that combines well with other agents and does not significantly impact the normal bone marrow.

Impact of COVID 19 on our Research Programs:

We are advancing first-in-class targeted agents to treat life-threatening cancers that, in most cases, are not elective for patients and require immediate treatment. However, COVID-19 has caused global economic and social disruptions that could adversely affect our ongoing or planned research and development and clinical trial activities including enrollment of patients in our ongoing clinical trials, collection and analysis of patient data and eventually, the reporting of top-line results from our trials.

Our team proactively addressed these new challenges swiftly and appropriately, implementing safeguards and procedures to ensure both the safety of our employees and stakeholders, and accommodate the potential challenges due to COVID-19. Aptose was early in directing its employees to work-from-home and provided the tools to minimize productivity disruptions. Our clinical operations team reached out to active and future clinical sites to determine their needs and challenges and assist where possible, including virtual monitoring of patients, which reduces patients' visits. We also have contacted our drug manufacturers to identify any potential supply chain disruptions and are adjusting accordingly. During the early part of the first quarter of 2020, we began to carefully monitor the potential impact of COVID-19, and on a regular basis, we communicated with investigators at our clinical sites to gain an evolving understanding of competing COVID-19 related activities and clinical trial related activities.

In the beginning of April 2020, we learned that some of our larger clinical sites that are impacted by COVID-19 may either postpone or face delays in the enrollment of patients on all on-going clinical trials due to a number of factors, including the re-allocation of resources and to avoid clinical trial patients being exposed to COVID-19. Such measures taken at the clinical sites could lead to a slowdown in the enrollment of patients on our trials at these sites. To minimize the impact of COVID-19, we focused efforts on our other larger clinical sites and regional cancer care sites that are not/less impacted by COVID-19 to recruit patients into the fourth cohort. While it is difficult to estimate the duration and impact of COVID-19 on the larger clinical sites and regional cancer care sites, as of the date of this report, we have not experienced and do not foresee material delays to the enrollment of patients or timelines for the luxeptinib Phase 1a/b B-cell malignancy trial due to the variety of clinical sites that we have actively recruited for this trial. APTO-253, which is administered intravenously, requires the need for hospital / clinical site resources to assist and monitor patients during each infusion and based on the current conditions caused by COVID-19, future enrollment of patients on this trial is likely to be negatively impacted.

PROGRAM UPDATES

Luxeptinib (CG-806)

Indication and Clinical Trials:

Luxeptinib is being developed with the intent to deliver the agent as an oral therapeutic for the treatment of R/R AML and for the treatment of a spectrum of B cell malignancies (including but not limited to CLL, SLL and NHL).

On March 25, 2019, we announced that the FDA granted Aptose IND allowance to initiate its Phase 1a/b clinical trial for luxeptinib. The clinical trial is a multicenter, open label, dose-escalation study with additional optional expansion cohorts to assess the safety, tolerability, pharmacokinetics and pharmacodynamic effects, and prelimnary efficacy of luxeptinib in patients with CLL, SLL or NHL. In this study, luxeptinib is administered in gelatin capsules twice daily (BID during a 28-day cycle.

As of the date of this report, we have initiated thirty clinical sites for the Phase 1a/b trial in patients with CLL/SLL or NHL which include specialty regional cancer care centers as well as large hospitals and key academic institutions. As of the date of this report, we have completed the first, second, third and fourth dose levels (150 mg, 300 mg, 450 mg and 600 mg BID, respectively). Cohort 5 (750mg) enrollment is ongoing. Under an FDA-approved accelerated titration protocol, only one patient was required at each of the first two dose levels, followed by three patients at each dose level thereafter. Intra-patient dose escalation is allowed if the higher dose is safe in three or more patients, and additional patients may be enrolled at dose levels previously declared safe. To date, we have reported that among enrolled patients with an array of B-cell malignancies, three classic CLL patients have received luxeptinib and all three demonstrated inhibition of phospho-BTK and "on-target" lymphocytosis and modest tumor reductions in different tumor types, indicating target engagement and pharmacologic activity of luxeptinib. As luxeptinib moves from low/intermediate dose levels and into the higher dose levels, it is hoped that an optimal dose can be selected that demonstrates formal clinical responses without excessive toxicity.

We are also advancing luxeptinib into myeloid malignancies, with an initial focus on AML, in a separate Phase 1a/b trial. On June 29, 2020, we announced that we had received allowance from the FDA to proceed into a study in R/R AML with a starting dose of 450 mg BID, and subsequently on October 19, 2020, announced that we had initiated dosing of the first patient with AML. As of the date of this report we have initiated six clinical sites for the Phase 1a/b trial and dosing continues at the 600 mg dose cohort.

The clinical trial is a multicenter, open label, dose-escalation study with additional optional expansion cohorts to assess the safety, tolerability, pharmacokinetics and pharmacodynamic effects, and preliminary efficacy of luxeptinib in patients with R/R AML. In this study, luxeptinib is administered in gelatin capsules BID during a 28-day cycle. Our strategy was to identify a starting dose of luxeptinib that we believe could be therapeutically active in critically ill patients with R/R AML. In our ongoing Phase 1a/b study in patients with CLL and other B-cell malignancies, 450 mg BID luxeptinib delivered plasma levels potently inhibited phospho-FLT3 in a plasma inhibitory activity (PIA) reporter cell assay, suggesting that the 450 mg BID dose may be active in patients with AML. Aptose plans to dose escalate beyond the 450 mg BID dose level, provided the 450 mg BID dose level is safe and well tolerated in R/R AML patients. Based on strong preclinical evidence of luxeptinib's activity against AML – including demonstration of mutation-agnostic and genotype-agnostic potency, particularly compared against other FLT3 inhibitors, and its ability to safely cure AML in murine leukemia models – we believe that luxeptinib may offer hope to the fragile and difficult-to-treat AML patient population. The FDA has granted orphan drug designation to luxeptinib for the treatment of patients with AML. Orphan drug designation is granted by the FDA to encourage companies to develop therapies for the treatment of diseases that affect fewer than 200,000 individuals in the United States. Orphan drug status provides research and development tax credits, an opportunity to obtain grant funding, exemption from FDA application fees and other benefits. The orphan drug designation also provides us with seven additional years of marketing exclusivity in this indication.

Manufacturing:

During fiscal years 2017 and 2018, we created a scalable chemical synthetic route for the manufacture of luxeptinib drug substance and have scaled the manufacture of API (active pharmaceutical ingredient, or drug substance) to multi-kg levels, we completed the manufacture of a multi-kg batch of API under GMP conditions as our API supply for our first-in-human clinical trials, and we manufactured under GMP conditions two dosage strengths of capsules to serve as our clinical supply in those human studies. During fiscal 2019 and 2020, we completed successful manufacture of multiple batches of API and drug product, and planned numerous GMP production campaigns to supply the ongoing trial and planned trials into the future. To date we have been able to manufacture API and capsules to support clinical supplies under GMP conditions. We are continuing our manufacturing campaigns in the current 2021 fiscal period and continue scale-up and tech transfer activities to support additional manufacturing capacity for the ongoing and planned clinical trials of luxeptinib. Additional research and development funds are being utilized to support exploratory formulation studies in an ongoing effort to craft a superior formulation for later stage development of luxeptinib.

Preclinical Program Updates:

We have completed several non-clinical studies that demonstrate the highly differentiated profile of luxeptinib. Key studies that have been presented at scientific forums are as follows:

- On April 15, 2018, at the 2018 Annual Meeting of the American Association for Cancer Research ("AACR"), we presented with the OHSU Knight Cancer Institute preclinical data demonstrating that luxeptinib, a pan-FLT3/pan-BTK inhibitor, demonstrates broader activity and superior potency to other FLT3 and BTK inhibitors against primary bone marrow samples from patients with hematologic malignancies. We also presented preclinical data demonstrating that luxeptinib targets multiple pathways to kill diverse subtypes of AML and B-cell malignancies in vitro.

- On June 15, 2018, at the 23rd Congress of the European Hematology Association ("EHA"), we presented, during a poster presentation, preclinical data demonstrating a unique binding mode of luxeptinib to wild type and C481S mutant BTK. Further, we presented that luxeptinib suppresses the BCR, AKT/PI3K, ERK and NFkB signaling pathways and exerts broader and far greater potency of direct cancer cell killing that ibrutinib against malignant bone marrow cells from patients with CLL, ALL and a host of other hematologic malignancies.

- On December 3, 2018, we announced two separate poster presentations at the American Society of Hematology ("ASH") Annual Meeting. The OHSU Knight Cancer Institute and Aptose presented data in one poster and the team at The University of MDACC presented data in a separate poster. These presentations highlighted several key findings. First, in collaboration with the MDACC, orally administered luxeptinib demonstrated efficacy in a PDX study in which the bone marrow cells from a patient with AML having dual ITD and D835 mutations in FLT3 were implanted into a mouse. The dual FLT3 mutant form of AML represents a very difficult-to-treat population that has shown resistance to other FLT3 inhibitors, and data from the PDX model suggest that luxeptinib may be useful in treating such patients. Secondly, Aptose presented high level data from preclinical GLP toxicology studies that demonstrate orally administered luxeptinib is a well-tolerated targeted molecule. Finally, in collaboration with the OHSU Knight Cancer Center, studies of luxeptinib on 124 samples of freshly isolated bone marrow from CLL patients demonstrated both broader and greater cell killing potency for luxeptinib than Ibrutinib.

- On April 1, 2019, at the 2019 Annual Meeting of the AACR, Aptose, along with our collaborators at OHSU Knight Cancer Institute, presented data highlighting luxeptinib was more potent in killing AML patient-derived samples than other FLT3 inhibitors including midostaurin, sorafenib, sunitinib, dovitinib, quizartinib, crenolanib and gilteritinib. Luxeptinib was equally potent against cells from patients in the adverse, intermediate and favorable risk groups (2017 ELN risk stratification), and cells from patients with relapsed or transformed AML (World Health Organization classification) were as sensitive as those from patients with de novo AML. The data demonstrated potency on primary AML patient samples across all AML subgroups including relapsed/refractory/transformed AML and those with genetic abnormalities related to poor prognosis. While patient samples with FLT3-ITD mutations were expected to have greater sensitivity to luxeptinib, the most surprising correlation was the sensitivity of patient samples with IDH1 R132 mutations. The enhanced sensitivity of IDH-1 mutant AML to luxeptinib warrants investigation in the clinical setting. Moreover, in studies of luxeptinib on AML patient bone marrow samples, we demonstrated that mutations in p53, ASXL1 and NPM1 do not hinder the potency of luxeptinib.

- On June 14, 2019, we presented new preclinical data for luxeptinib in a poster presentation at the 24th Congress of the EHA in Amsterdam, the Netherlands. The poster, *CG-806, preclinical in vivo efficacy and safety profile as a pan-FLT3 / pan-BTK inhibitor*, highlights the in vivo anti-leukemic efficacy of luxeptinib and its GLP toxicology and toxicokinetic profile. In a preclinical MV4-11 FLT3-ITD AML xenograft mouse model, luxeptinib suppressed leukemia growth at all doses tested throughout the 28-day period of dosing. In the mice treated with 100 mg/kg, 5 of 11 (45%) were cured through day 120, and in the 300 mg/kg group, 10 of 11 (91%) of the mice were cured. Retreating the "uncured' mice in these two dose groups for an additional 28 days beginning on day 88 led to rapid and robust antitumor response in all retreated mice through day 120. In the "re-treated" mice, no drug resistance and no toxicities were observed. GLP 28-day toxicology and TK studies mice and dogs showed no adverse luxeptinib-related effects on body weight, ophthalmic, respiratory or neurological examinations, clinical pathology (coagulation, clinical chemistry, or urinalysis), organ weight or macroscopic evaluations. No luxeptinib-related cardiovascular effects were noted in the 28-day GLP toxicology study or in a separate preclinical cardiovascular safety study.

- On October 24, 2019, we presented preclinical data in a poster presentation at the 5th International Conference on Acute Myeloid Leukemia "Molecular and Translational" Advances in Biology and Treatment in Estoril, Portugal. The poster, *CG-806 Pan-FLT3/Pan-BTK Inhibitor Simultaneously Suppresses Multiple Oncogenic Signaling Pathways to Treat AML,* highlighted that luxeptinib acts on large xenograft tumors with no evidence of drug resistance and with no observed toxicity, enhances killing of patient-derived AML and B-cell cancer cells when combined with venetoclax, and retains activity in patient-derived AML cells even when cells harbor mutations of FLT3, IDH-1, NPM1, ASXL1 or p53.

- On December 8 and 9, 2019, we presented new preclinical data in two separate poster presentations at the 61st ASH Annual Meeting. On December 8, 2019, the poster *CG-806, a First-in-Class Pan-FLT3/Pan-BTK Inhibitor, Exhibits Broad Signaling Inhibition in Chronic Lymphocytic Leukemia Cells* compared luxeptinib and ibrutinib, the standard of care, on primary patient cells of CLL highlighting that CG-806 broadly inhibits B-cell receptor signaling in CLL cells, resulting in CLL cell apoptosis and reduced proliferation, luxeptinib is more potent than ibrutinib in inducing apoptosis of MEC1 CLL cells and, finally, luxeptinib targets elements of the CLL microenvironment, and thereby potentially targets pro-survival signals from the microenvironment. The poster presented on December 9, 2019 titled *Synergistic Targeting of BTK and E-Selectin/CXCR4 in the Microenvironment of Mantle Cell Lymphomas***,** explored the effects of luxeptinib on cells of MCL, a rare subtype of aggressive B cell non Hodgkin lymphoma that is incurable with standard therapy, and investigated the molecular mechanisms of acquired resistance to treatment, highlighted that luxeptinib demonstrated superior anti-lymphoma effects compared with ibrutinib, exerting potent cell growth inhibitory effects on ibrutinib-resistant MCL cells, luxeptinib suppresses phospho-BTK, -Stat3, -AKT, -ERK, -Src, NF-kB, and the anti-apoptotic protein Mcl1, while upregulating p53, luxeptinib increased autophagy in MCL cells, which may be associated with resistance to luxeptinib-mediated apoptosis. Inhibition of autophagy re-sensitizes MCL cells to luxeptinib-induced apoptosis, luxeptinib treatment upregulates CXCR4/E-selectin levels in MCL cells and finally, combination of CXCR4/E-selectin antagonists with luxeptinib enhances luxeptinib-induced apoptotic killing of MCL cells in the presence of the tumor microenvironment. On December 7, 2019, Aptose also hosted a corporate event and clinical update, where the company's management and invited Key Opinion Leaders highlighted some early clinical observations on safety, tolerability, pharmacokinetics, and activity, including. The discussion focused on key findings from dose levels one and two of luxeptinib in heavily pretreated R/R CLL patients, including: the clean safety profile to date, with no myelosuppression, drug-related adverse events or dose-limiting toxicity observed; meaningful oral absorption and predictable pharmacokinetic ("PK") profile; evidence of target engagement manifesting as inhibition of Phospho-BTK, Phospho-SYK and Phospho-ERK in a plasma inhibitory assay ("PIA") using plasma from the CLL patient on dose level two, and early evidence of clinical activity in the same patient manifesting as increase in peripheral blood lymphocytes (lymphocytosis), typically associated with BTK inhibition.

- On April 27, 2020, we presented the early clinical data on luxeptinib at the AACR Virtual Annual Meeting I in lieu of the live oral presentation originally planned. A video summary of Abstract # 9967 - *Early clinical findings from a Phase 1a/b dose escalation trial to evaluate the safety and tolerability of CG-806 in patients with relapsed or refractory CLL/SLL or non-Hodgkin's lymphomas* described the first-in-human tests of luxeptinib which are being carried out in a Phase 1a/b clinical study in patients with significant unmet needs including patients with relapsed or refractory CLL, SLL or NHL who had been failed by or been intolerant to two lines of established therapy. We noted that the second patient, treated at the 300 mg BID dose level, represented a classic CLL patient that developed a brisk lymphocytosis (evidence of BTK target engagement and evidence of pharmacologic activity), and that enrollment was continuing.

- On June 12, 2020, we presented new clinical data on luxeptinib in a poster presentation at the 25th Congress of the EHA. The poster, *Early Clinical Findings from a Phase 1 a/b Dose Escalation Trial to Evaluate the Safety and Tolerability of CG-806 in Patients with Relapsed or Refractory CLL/SLL or Non-Hodgkin's Lymphomas* (EHA2020 Abstract# EP711), reviewed luxeptinib data for eight patients (as of the data cut-off date on May 5, 2020) with relapsed or refractory CLL, SLL or NHL in the first in-human Phase 1a/b, open-label, single arm, multicenter dose-escalation clinical study. Data from the ongoing trial demonstrated that luxeptinib was well-tolerated in patients treated at 150 mg, 300 mg, 450 mg BID over multiple cycles, with no dose-limiting toxicities or serious adverse events observed, supporting continued dose escalation. Luxeptinib treatment achieved human steady state PK levels known to be effective in murine tumor models and led to complete inhibition of phospho-BTK and multiple CLL survival pathways. Luxeptinib treatment also led to lymphocytosis in both classic CLL patients entering study with elevated lymphocyte counts and led to complete inhibition of phospho-FLT3, suggesting that dose levels evaluated in this study may be therapeutic in patients with AML.

- On June 22, 2020, we presented new preclinical data on luxeptinib in a poster presentation at the AACR Virtual Annual II 2020. The poster, *CG-806, a First-in-Class FLT3/BTK Inhibitor, and Venetoclax Synergize to Inhibit Cell Proliferation and to Induce Apoptosis and Aggressive B-cell Lymphomas*, illustrated how luxeptinib simultaneously inhibits the driver BCR pathway and PI3K/AKT, NFκB and MAPK-mediated rescue pathways to kill aggressive double-hit and double-expressor B-cell lymphoma cells. Overall, the presented work provided additional mechanistic evidence to support the clinical development of CG-806 as a single agent or in combination with venetoclax in patients with aggressive B-cell lymphomas harboring unfavorable BCL2/MYC/BCL6 translocations and / or overexpression.

- On December 6, 2020, we presented new clinical data in a virtual poster presentation at the 62nd ASH Annual Meeting. The poster, *A Phase 1 a/b Dose Escalation Study of the Mutation Agnostic BTK/FLT3 Inhibitor CG-806 in Patients with Relapsed or Refractory CLL/SLL or Non-Hodgkin's Lymphomas* reviewed luxeptinib data for fourteen patients (as of the cutoff date of November 2, 2020) with relapsed or refractory CLL, SLL or NHL in the first in-human Phase 1a/b, open-label, single arm, multicenter dose-escalation clinical study. Data from the ongoing trial demonstrated that luxeptinib was generally well-tolerated in patients treated at 150 mg, 300 mg, 450 mg, and 600 mg BID over multiple cycles, supporting continued dose escalation. At the ongoing 750 mg dose, luxeptinib achieved steady state plasma concentration greater than 2 micromolar at the of Cycle 1. Luxeptinib treatment also led to modest reductions in patients with different B-cell malignancies. On December 6, 2020, Aptose also hosted a corporate event and clinical update, where the company's management and invited Key Opinion Leaders highlighted some early clinical observations on safety, tolerability, pharmacokinetics, and activity, including. The discussion focused on key findings from dose levels one and two of luxeptinib in heavily pretreated R/R CLL patients, including: the clean safety profile to date, with no myelosuppression, drug-related adverse events or dose-limiting toxicity observed; meaningful oral absorption and predictable PK profile; evidence of target engagement manifesting as inhibition of Phospho-BTK, Phospho-SYK and Phospho-ERK in a PIA using plasma from the CLL patient on dose level two, and early evidence of clinical activity in the same patient manifesting as increase in peripheral blood lymphocytes (lymphocytosis), typically associated with BTK inhibition.

APTO-253

APTO-253, a small molecule inhibitor of MYC gene expression, is being evaluated by Aptose in a Phase 1a/b clinical trial in patients with R/R hematologic malignancies, particularly R/R AML and high-risk MDS. The Phase 1b, multicenter, open-label, dose-escalation clinical trial of APTO-253 is designed to assess the safety, tolerability, pharmacokinetics and pharmacodynamic responses and efficacy of APTO-253 as a single agent and determine the recommended Phase 2 dose. APTO-253 is being administered once weekly, over a 28-day cycle. The dose escalation stage of the study could potentially enroll up to 20 patients with R/R AML or high-risk MDS. The study is designed to then transition, as appropriate, to single-agent expansion cohorts in R/R AML and/or high-risk MDS.

As of the date of this report, we have multiple active sites recruiting patients in the dose escalation stage of the trial. As of the date of this report, we have completed enrollment and treatment of patients on the first, second, third and fourth dose levels (20, 40, 66, and 100 mg/m^2, respectively). Under an FDA-approved accelerated titration protocol, only one patient was required at each of the first two dose levels, followed by three patients at each dose level thereafter. Aptose is currently enrolling and treating patients in the fifth dose level (150 mg/m^2) of APTO-253. During the second quarter of 2020, the FDA allowed an amendment for Aptose to initiate more aggressive dose escalations with APTO-253, provided the tolerability profile remains favorable. The first four dosing cohorts have enrolled a mix of patients with AML and MDS. To date, we have observed meaningful reductions in MYC expression in peripheral blood mononuclear cells (PBMCs) from treated patients with AML and MDS, demonstrating MYC target engagement and mechanistic proof of concept in different indications.

Manufacturing:

We are continuing to manufacture additional drug substance and drug product for use in the ongoing trial.

We are exploring additional drug delivery methods for APTO-253 and plan to initiate additional non-clinical studies for solid tumor and hematologic cancer development. As preparing, submitting, and advancing applications for regulatory approval, developing drugs and drug product and clinical trials are sometimes complex, costly, and time-consuming processes, an estimate of the future costs is not reasonable at this time.

Preclinical data presented at scientific forums are as follows:

- On April 17, 2018, at the 2018 Annual Meeting of the AACR, we presented preclinical data demonstrating that APTO-253 is a new addition to the repertoire of drugs that can exploit DNA BRCA1/2 deficiency, broadening the potential applicability of APTO-253 towards solid cancer indications.

- On June 4, 2018, we announced that preclinical data elucidating the mechanism of action of APTO-253 were published in two separate articles in the June 2018 issue (Volume 17, Number 6) of Molecular Cancer Therapeutics, a peer-reviewed journal of the AACR. The most important finding disclosed in the published articles is the ability of the APTO-253 small molecule to bind to and stabilize a G-quadruplex DNA motif found in the promoter regulatory region of the MYC oncogene and to inhibit expression of the MYC gene, thereby depleting the cells of the MYC oncoprotein and leading to cancer cell death. These findings make APTO-253 the only clinical stage molecule that can directly target the MYC gene and inhibit its expression.

- On April 1, 2019, at the 2019 Annual Meeting of the AACR, we presented in vitro studies that further define the mechanism of action of APTO-253. Researchers found that APTO-253 targets a G-quadruplex motif in the P1/P2 promoter region of the MYC gene and inhibits MYC gene expression to induce apoptosis, resulting in its ability to potently kill hematologic malignant cell lines and primary samples from AML and CLL patients. In this study, researchers performed long-term in vitro studies to determine if and how cells might develop resistance to APTO-253. MYC driven Raji cells required three years in increasing concentrations of APTO-253 in order to adopt multiple modifications and develop high level resistance to APTO-253. These modifications include up-regulation of the ABCG2 transporter, acquisition of a more stable MYC protein lacking the conserved core sequence of MYC Box III generated by deletion of an internal region of the MYC gene exon 2, and utilization of alternate P3 promoter not inhibited by G4 binding and stabilization. Importantly, these studies confirmed the MYC gene as a target of APTO-253.

- On December 6, 2020, we presented new clinical data in a virtual poster presentation at the 62nd ASH Annual Meeting. The poster, *A Phase 1a/b Dose Escalation Study of the MYC Repressor APTO-253 in Patients with Relapsed or Refractory AML or Higher-risk MDS* reviewed APTO-253 data for 10 patients with relapsed or refractory AML and MDS at 20 mg/m^2, 40 mg/m^2, 66 mg/m^2 and 100 mg/m^2 once weekly over multiple cycles. APTO-253 demonstrated MYC reduction in 5 out of 6 patients 24 hours after dosing C1D1 providing proof of concept that APTO-253 is a MYC repressor. APTO-253 was well tolerated with no dose-limiting toxicities or serious adverse events observed, supporting continued dose escalation.

While as of the date of this report we have not experienced any material delays in initiating our luxeptinib Phase 1 clinical study in AML due to COVID-19, we are conducting site initiation visits remotely which could result in delays in site activations and negatively impact this trial. Additionally, COVID-19 could negatively impact patient enrollment if our clinical sites are unable to enroll patients due to either a lack of administrative resources at their sites or decisions made at the clinical sites to limit patient exposure to COVID-19.

As of the date of this report, we have not experienced material delays in the manufacturing of luxeptinib or APTO-253 related to COVID-19. Should our manufacturers experience shortages in staffing or be required to shut down their facilities due to COVID-19 for an extended period of time, our trials may be negatively impacted.

LIQUIDITY AND CAPITAL RESOURCES

We are an early stage development company and we currently do not earn any revenues from our drug candidates. The continuation of our research and development activities and the commercialization of the targeted therapeutic products are dependent upon our ability to successfully finance and complete our research and development programs through a combination of equity financing and payments from strategic partners. We have no current sources of significant payments from strategic partners.

Sources of liquidity:

The following table presents our cash and cash equivalents, investments and working capital as at December 31, 2020 and 2019.

(in thousands)	Balances at December 31, 2020	Balances at December 31, 2019
Cash and cash equivalents	$ 117,393	$ 79,842
Investments	5,000	17,758
Total	$ 122,393	$ 97,600
Working capital	118,264	93,227

Working capital represents primarily cash, cash equivalents, investments, prepaid expenses and other current assets less current liabilities.

We believe that our cash, cash equivalents and investments on hand at December 31, 2020 will be sufficient to finance our operations for at least 12 months from the issuance date of these financial statements. Our cash needs for the next twelve months include estimates of the number of patients and rate of enrollment of our clinical trials, the amount of drug product that we will require to support our clinical trials, and our general corporate overhead costs to support our operations, and our reliance on our manufacturers. We have based these estimates on assumptions and plans which may change and which could impact the magnitude and/or timing of operating expenses and our cash runway.

Since our inception, we have financed our operations and technology acquisitions primarily from equity financing, proceeds from the exercise of warrants and stock options, and interest income on funds held for future investment.

On July 20, 2020 and August 10, 2020, the Company completed a confidentially marketed public offering ("CMPO"), with Piper Sandler & Co. ("Piper Sandler") as the representative of the underwriters, through the issuance of, in the aggregate, 11,854,472 Common Shares for gross proceeds of $62.2 million (approximately $58.2 million net of share issue costs).

On May 5, 2020, the Company entered an "at-the-market" equity distribution agreement with Piper Sandler and Canaccord Genuity LLC ("Canaccord Genuity") acting as co-agents (the "2020 ATM Facility"). Under the terms of the 2020 ATM Facility, the Company may, from time to time, sell Common Shares having an aggregate offering value of up to $75 million through Piper Sandler and Canaccord Genuity on the Nasdaq Capital Market. During the year ended December 31, 2020, the Company did not issue any shares under the 2020 ATM Facility.

During the year ended December 31, 2019, the Company completed two CMPOs, with RBC Capital Markets, LLC ("RBC Capital Markets") and Canaccord Genuity, as representatives of the underwriters, and Piper Jaffray & Co (now Piper Sandler) as the representative of the underwriters, respectively, through the issuance of, in the aggregate, 30,043,750 Common Shares for aggregate gross proceeds of $95.45 million (approximately $88.18 million net of share issue costs). The Company also raised capital pursuant to two separate share purchase agreements with Aspire Capital Fund, LLC ("Aspire Capital") through the issuance of an aggregate of 7,302,433 Common Shares for aggregate gross proceeds of $14.4 million. We do not expect that COVID-19 will have a significant impact on our liquidity and capital resources and we are not incurring significant additional costs to support our ongoing operations during this time. We have not entered into long term manufacturing contracts and should there be a delay in our trials we have flexibility to reduce future planned manufacturing campaigns without incurring additional costs.

We expect that we will need to raise additional capital or incur indebtedness to continue to fund our operations in the future. In December 2019, we filed a short form base shelf prospectus (the "Base Shelf") that allows us to distribute, upon the filing of prospectus supplements, up to $200,000,000 of Common Shares, warrants, or units comprising any combination of Common Shares and warrants. The Base Shelf was declared effective by the SEC on January 9, 2020 and expires on January 9, 2023.

Our ability to raise additional funds could be affected by adverse market conditions, the status of our product pipeline, possible delays in enrollment in our trial related to COVID-19, and various other factors and we may be unable to raise capital when needed, or on terms favorable to us. If the necessary funds are not available, we may need to delay, reduce the scope of, or eliminate some of our development programs, potentially delaying the time to market for any of our product candidates.

Cash flows:

The following table presents a summary of our cash flows for the years ended December 31, 2020 and 2019:

(in thousands)	For the Years Ended, December 31,2020	December 31, 2019
Net cash provided by (used in):		
Operating activities	$ (33,891)	$ (21,558)
Investing activities	12,628	(17,370)
Financing activities	58,807	103,448
Effect of exchange rates changes on cash and cash equivalents	7	23
Net increase in cash and cash equivalents	$ 37,551	$ 64,543

Cash used in operating activities:

Our cash used from operating activities for the years ended December 31, 2020 and 2019 was approximately $33.9 million and $21.6 million, respectively. Net cash used in operating activities was higher in the year ended December 31, 2020 as compared with the year ended December 31, 2019 resulting mostly from a higher net loss in the current year. See "Results of Operations". Our uses of cash for operating activities for both years consisted primarily of salaries and wages for our employees, facility and facility-related costs for our offices and laboratories, fees paid in connection with preclinical and clinical studies, drug manufacturing costs, laboratory supplies and materials, and professional fees.

We do not expect to generate positive cash flow from operations for the foreseeable future due to additional research and development costs, including costs related to drug discovery, preclinical testing, clinical trials, and manufacturing, as well as operating expenses associated with supporting these activities, and potential milestone payment to our collaborators. It is expected that negative cash flow will continue until such time, if ever, that we receive regulatory approval to commercialize any of our products under development and/or royalty or milestone revenue from any such products exceeds expenses.

Cash flow from investing activities:

Our cash provided by investing activities for the year ended December 31, 2020 was $12.6 million, and consisted of maturities of investments of $12.7 million and purchases of property and equipment of $79 thousand. Our cash used by investing activities for the year ended December 31, 2019 was $17.4 million, and consisted of net purchases of investments of $17.3 million and purchases of property and equipment of $102 thousand.

The composition and mix of cash, cash equivalents and investments is based on our evaluation of conditions in financial markets and our near-term liquidity needs. We have exposure to credit risk, liquidity risk and market risk related to our investments. The Company manages credit risk associated with its cash and cash equivalents and investments by maintaining minimum standards of R1-low or A-low investments. The Company invests only in highly rated corporations and treasury bills which are capable of prompt liquidation. The Company manages its liquidity risk by continuously monitoring forecasts and actual cash flows. The Company is subject to interest rate risk on its cash and cash equivalents and investments. The Company does not believe that the results of operations or cash flows would be affected to any significant degree by a sudden change in market interest rates relative to interest rates on the investments, owing to the relative short-term nature of the investments.

Cash flow from financing activities:

Our cash flow from financing activities for the year ended December 31, 2020 was approximately $58.8 million, consisted mostly of the CMPO we completed in July and August 2020 as described above and of proceeds from the exercise of stock options of $573 thousand. Net cash provided by financing activities in the year ended December 31, 2019 reflects mostly:

i) 18,543,750 Common Shares issued pursuant to the CMPO we completed in December 2019 with Piper Jaffray& Co. (now Piper Sandler) as representatives of the underwriters, for net proceeds of approximately $68.6 million,

ii) 11,500,000 Common Shares issued pursuant to the CMPO we completed in June 2019 with RBC Capital Markets and Canaccord Genuity, as representatives of the underwriters, for net proceeds of approximately $19.6 million,

iii) 1,800,000 shares issued to Aspire Capital pursuant to the 2019 Aspire Purchase Agreement, as described below, for net proceeds of approximately $4.4 million,

iv) 5,502,433 shares issued to Aspire Capital pursuant to the 2018 Aspire Purchase Agreement, as described below, for net proceeds of approximately $10 million,

v) 77,349 shares issued pursuant to the 2018 ATM Facility with Cantor Fitzgerald, as described below, for net proceeds of approximately $178 thousand, and

vi) proceeds from the exercise of stock options of $718 thousand.

At-The-Market Facilities

On May 5, 2020, the Company entered into an equity distribution agreement with Piper Sandler and Canaccord Genuity acting as co-agents in connection with the 2020 ATM Facility. Under the terms of the 2020 ATM Facility, the Company may, from time to time, sell Common Shares having an aggregate offering value of up to $75 million through Piper Sandler and Canaccord Genuity on the Nasdaq Capital Market. During the year ended December 31, 2020, the Company did not issue any shares under the 2020 ATM Facility.

On May 24, 2019, we entered an at-the-market equity facility (the "2019 ATM Facility") with Piper Jaffray & Co. (now Piper Sandler) and Canaccord Genuity, acting as co-agents. The 2019 ATM Facility replaced the previous facility that we had entered into with Cantor Fitzgerald (the "2018 ATM Facility"). The 2019 ATM Facility allowed us to instruct our co-agents to offer up to approximately 20.2 million Common Shares, having an aggregate offering value of up to $40.0 million, at the prevailing market price from time to time. The Company did not issue any shares under the 2019 ATM Facility, and on December 16, 2019, the Company terminated the 2019 ATM Facility.

On March 27, 2018, the Company entered into an equity distribution agreement with Cantor Fitzgerald acting as sole agent in connection with the 2018 ATM Facility. Under the terms of the 2018 ATM Facility, the Company was allowed, from time to time, to sell Common Shares having an aggregate offering value of up to $30 million through Cantor Fitzgerald on the Nasdaq Capital Market. During the year ended December 31, 2019, the Company issued 77,349 shares under the 2018 ATM Facility at an average price of $2.37 for gross proceeds of $183 thousand ($178 thousand net of share issue costs). On a cumulative basis to December 31, 2019, the Company had raised a total of $11.2 million gross proceeds ($10.9 million net of share issue costs) under the 2018 ATM Facility. The Company terminated this agreement on May 24, 2019.

Common Share Purchase Agreements

On May 30, 2018, the Company entered into a common share purchase agreement to sell up to $20.0 million of Common Shares to Aspire Capital over approximately 30 months (the "2018 Aspire Purchase Agreement"). Pursuant to the terms of this agreement, on June 8, 2018, the Company issued 170,261 Common Shares to Aspire Capital in consideration for entering into the 2018 Aspire Purchase Agreement for a total cost of $600 thousand. During the year ended December 31, 2019, the Company issued 5,502,433 Common Shares to Aspire Capital pursuant to the 2018 Aspire Purchase Agreement at an average price of $1.82 per Common Share for gross and net proceeds of $10 million. On a cumulative basis, the Company raised a total of approximately $11.9 million gross and net proceeds under the 2018 Aspire Purchase Agreement. As of May 24, 2019 the Company had issued 6,409,980 Common Shares, the maximum number of Common Shares issuable under this facility without shareholder approval, and the 2018 Aspire Purchase Agreement was accordingly terminated.

On May 7, 2019, the Company entered into the a common share purchase agreement with Aspire Capital (the "2019 Aspire Purchase Agreement"), which provided that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital was committed to purchase up to an aggregate of $20 million of Common Shares over approximately 30 months. Pursuant to the terms of this agreement, on May 13, 2019, the Company issued 171,428 Common Shares to Aspire Capital in consideration for entering into the 2019 Aspire Purchase Agreement for a total cost of $360 thousand. During the period from May 7, 2019 up to December 16, 2019, the date the 2019 Aspire Purchase Agreement was terminated, the Company issued 1,800,000 Common Shares under the agreement at an average price of $2.43 per Common Share for gross and net proceeds of $4.4 million.

Contractual Obligations and Off-Balance Sheet Financing

As at December 31, 2020, we have not entered into any off-balance sheet arrangements.

The Company enters into research, development and license agreements in the ordinary course of business where the Company receives research services and rights to proprietary technologies. Milestone and royalty payments that may become due under various agreements are dependent on, among other factors, clinical trials, regulatory approvals and ultimately the successful development of a new drug, the outcome and timing of which is uncertain.

Under the license agreement with CG with regards to the Rights (other than the China Rights), the Company has obligations for development milestones of $16 million related to the initiation of Phase 2 and pivotal clinical trials, and regulatory milestones totaling $44 million. The Company also has an obligation to pay royalty payments on sales of commercialized product. The timing of any milestone or royalty payments that may become due is not yet determinable.

Under the license agreement with CG with regards to the China Rights, we entered into a license agreement with CG to gain an exclusive license to CG-806 in China (including the People's Republic of China, Hong Kong and Macau). The Company has future obligations of development milestones of $6 million related to approval of an IND and to the initiation of Phase 2 and pivotal clinical trials, and regulatory milestones totaling $20 million. The Company also has an obligation to pay sales milestones and royalty payments on sales of commercialized product. The timing of any milestone or royalty payments that may become due is not yet determinable.

RESULTS OF OPERATIONS

A summary of the results of operations for the years ended December 31, 2020 and 2019 is presented below:

	Year ended December 31,	
(in thousands except per Common Share data)	2020	2019
Revenues	$ —	$ —
Research and development expenses	29,288	16,835
General and administrative expenses	26,480	10,022
Net finance income	530	580
Net loss	$ (55,238)	$ (26,277)
Unrealized gain/(loss) on securities available-for-sale	(18)	18
Total comprehensive loss	$ (55,256)	$ (26,259)
Basic and diluted loss per Common Share	$ (0.67)	$ (0.52)

Net loss of $55.2 million for the year ended December 31, 2020 increased by approximately $28.9 million as compared with $26.3 million for the year ended December 31, 2019, primarily as a result of an increase of $19.1 million in stock-based compensation in the current period, a combined increase in program costs and related labor costs of approximately $9.8 million on our luxeptinib development program and higher cash-based general and administrative expenses of approximately $549 thousand. These expenses were partially offset by lower costs of $545 thousand on our APTO-253 development programs.

Research and Development Expenses

The research and development ("R&D") expenses for the years ended December 31, 2020 and 2019 were as follows:

	Year ended December 31,	
(in thousands)	2020	2019
Program costs – luxeptinib	$ 16,329	$ 8,475
Program costs – APTO-253	3,632	4,177
Personnel expenses	5,590	3,679
Stock-based compensation	3,720	474
Depreciation of equipment	17	30
	$ 29,288	$ 16,835

R&D expenses increased by $12.5 million to $29.3 million for the year ended December 31, 2020 as compared with $16.8 million for the comparative period in 2019. Changes to the components of our R&D expenses presented in the table above are primarily as a result of the following activities:

- Program costs for luxeptinib increased by approximately $7.9 million, mostly as a result of higher manufacturing costs, including costs to scale up manufacturing and research costs associated with optimizing the formulation, higher costs associated with the luxeptinib Phase 1a/b trial and the costs associated with the luxeptinib AML trial.

- Program costs for APTO-253 decreased by approximately $545 thousand, mostly as a result of lower manufacturing costs and lower clinical trial costs related to the APTO-253 Phase 1a/b trial.

- Personnel-related expenses increased by $1.9 million, mostly related to new positions hired since the second quarter of 2019 to support the luxeptinib Phase 1a/b and APTO-253 Phase 1a/b clinical trials and the luxeptinib AML Phase 1a/b clinical trial.

- Stock-based compensation increased by approximately $3.2 million in the year ended December 31, 2020, compared with the year ended December 31, 2019, mostly related to an increase in the number of options granted during the year ended December 31, 2020 and a higher grant date fair value of options as compared with the year ended December 31, 2019, and a higher rate of forfeitures in the comparative period in 2019.

General and Administrative Expenses

The general and administrative expenses for the years ended December 31, 2020 and 2019 are as follows:

	Year ended December 31,	
(in thousands)	2020	2019
General and administrative, excluding items below:	$ 8,627	$ 8,078
Stock-based compensation	17,718	1,822
Depreciation of equipment	135	122
	$ 26,480	$ 10,022

General and administrative expenses for the year ended December 31, 2020 were approximately $26.5 million as compared with $10.0 million for the comparative period in 2019, an increase of approximately $16.5 million. The increase was primarily as a result of the following:

- General and administrative expenses, other than stock-based compensation and depreciation of equipment, increased by approximately $549 thousand in the year ended December 31, 2020 primarily as a result of higher personnel related costs, higher insurance costs and higher office administrative costs offset by lower financing costs and lower travel expenses.

- Stock-based compensation increased by approximately $15.9 million in the year ended December 31, 2020, compared with the year ended December 31, 2019 mostly related to an increase in the number of restricted share units and options granted during the year ended December 31, 2020, and a higher grant date fair value of options as compared with December 30, 2019.

COVID-19 did not have a significant impact on our results of operations for the year ended December 31, 2020. We have not experienced and do not foresee material delays to the enrollment of patients or timelines for the luxeptinib Phase 1a/b trial due to the variety of clinical sites that we have actively recruited for this trial. Similarly, we do not expect our enrollment of the luxeptinib AML trial to be negatively impacted by COVID-19 as we plan to use a variety of clinical sites for this trial as well. APTO-253, which is administered intravenously, requires the need for hospital / clinical site resources to assist and monitor patients during each infusion and, based on the current conditions caused by COVID-19, future enrollment of patients on this trial is likely to be negatively impacted. As of the date of this report, we have not experienced material delays in the manufacturing of luxeptinib or APTO-253 related to COVID-19. Should our manufacturers be required to shut down their facilities due to COVID-19 for an extended period of time, our trials may be negatively impacted.

CRITICAL ACCOUNTING POLICIES

Critical Accounting Policies and Estimates

We periodically review our financial reporting and disclosure practices and accounting policies to ensure that they provide accurate and transparent information relative to the current economic and business environment. As part of this process, we have reviewed our selection, application and communication of critical accounting policies and financial disclosures. Management has discussed the development and selection of the critical accounting policies with the Audit Committee of the Board, and the Audit Committee has reviewed the disclosure relating to critical accounting policies in this MD&A.

Significant accounting judgments and estimates

Management's assessment of our ability to continue as a going concern involves making a judgment, at a particular point in time, about inherently uncertain future outcomes and events or conditions. Please see the "Liquidity and Capital Resources" section in this document for a discussion of the factors considered by management in arriving at its assessment.

Other important accounting policies and estimates made by management are the estimates related to prepaid and accrued R&D activities, the valuation of contingent liabilities, the valuation of tax accounts, and the assumptions used in determining the valuation of share-based compensation.

Research and Development Activities:

R&D costs are expensed as incurred. R&D costs consist primarily of salaries and benefits, stock-based compensation, manufacturing, contract services, clinical trials, and research related overhead. Non-refundable advance payments for goods and services that will be used in future research are recorded in prepaid and other assets and are expensed when the services are performed.

The Company records expenses for research and development activities based on Management's estimates of services received and efforts expended pursuant to contracts with vendors that conduct research and development on Aptose's behalf. The financial terms vary from contract to contract and may result in uneven payment flows as compared with services performed or products delivered. As a result, the Company is required to estimate research and development expenses incurred during the period, which impacts the amount of accrued expenses and prepaid balances related to such costs as of each balance sheet date. Management estimates the amount of work completed through discussions with internal personnel and external service providers as to the progress or stage of completion of the services. Management makes significant judgments and estimates in determining the accrued balance in each reporting period. As actual costs become known, the Company adjusts the accrued estimates.

Although Management does not expect our estimates to be materially different from amounts actually incurred, if the estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in the Company reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between the estimates of such expenses and the amounts actually incurred.

Valuation of contingent liabilities:

The Company utilizes considerable judgment in the measurement and recognition of provisions and the Company's exposure to contingent liabilities. Judgment is required to assess and determine the likelihood that any potential or pending litigation or any and all potential claims against the Company may be successful. The Company must estimate if an obligation is probable, as well as quantify the possible economic cost of any claim or contingent liability. Such judgments and assumptions are inherently uncertain. The increase or decrease of one of these assumptions could materially increase or decrease the fair value of the liability and the associated expense.

Valuation of tax accounts:

Uncertainties exist with respect to the interpretation of complex tax regulations and the amount and timing of future taxable income. Currently, the Company has deductible temporary differences which would create a deferred tax asset. Deferred tax assets are recognized for all deductible temporary differences to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences can be utilized. Management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits together with future tax planning strategies. To date, the Company has determined that none of its deferred tax assets should be recognized. The Company's deferred tax assets are mainly comprised of its net operating losses from prior years and prior year research and development expenses not yet deducted for income tax purposes. These tax pools relate to entities that have a history of losses, have varying expiry dates, and may not be used to offset taxable income. As well, there are no taxable temporary differences or any tax planning opportunities available that could partly support the recognition of these losses as deferred tax assets. The generation of future taxable income could result in the recognition of some portion or all of the remaining benefits, which could result in an improvement in the Company's results of operations through the recovery of future income taxes.

Valuation of share based compensation:

Management measures the costs for share based payments using market-based option valuation techniques. Assumptions are made and judgment is used in applying valuation techniques. These assumptions and judgments include estimating the future volatility of the share price, expected dividend yield, and expected life of the options. The Company uses historical data to estimate the expected dividend yield and expected volatility of its Common Shares in determining the fair value of stock options. The expected life of the options represents the estimated length of time the options are expected to remain outstanding. Such judgments and assumptions are inherently uncertain. The increase or decrease of one of these assumptions could materially increase or decrease the fair value of share based payments and share purchase warrants issued and the associated expense.

The weighted average assumptions that were used in the Black Scholes option pricing model to determine the fair value of stock options granted during the periods ended December 31, 2020 and 2019, respectively, are presented in Note 12 to the consolidated financial statements.

Leases:

Effective January 1, 2019, the Company adopted Financial Accounting Standards Board, or FASB, standard ASU No. 2016-02, "Leases (Topic 842)". The Company's operating leases of tangible property with terms greater than twelve months are recognized as right of use assets, which represents the lessee's right to use, or control the use of, a specified asset for the lease term, and a corresponding lease liability, which represents the lessee's obligation to make lease payments under a lease, measured on a discounted basis. The Company adopted the new standard using the alternative transition method, which permits a company to use its effective date as the date of initial application without restating comparative period financial statements. Landlord inducements in the form of free rent periods are netted against lease payments to the landlord in measuring right-of-use assets and lease liabilities.

Impact of adoption:

As a result of adopting Topic 842, we recorded as of January 1, 2019, a right of use asset of approximately $1.570 million, and a lease liability of approximately $1.647 million. Upon adoption, landlord inducements of approximately $78 thousand were de-recognized, and a corresponding adjustment was made to right-of-use assets.

Updated share information

As at March 23, 2021, we had 88,885,238 Common Shares issued and outstanding. In addition, there were 14,643,053 Common Shares issuable upon the exercise of outstanding stock options.

ITEM 7A. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK

Under SEC rules and regulations, as a smaller reporting company, we are not required to provide this information.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The financial statements required by this item are included in the Exhibits to this Annual Report on Form 10-K.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

As of the end of our fiscal year ended December 31, 2020, an evaluation of the effectiveness of our "disclosure controls and procedures" (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) was carried out by our management, with the participation of our principal executive officer and principal financial officer. Based upon that evaluation, our principal executive officer and principal financial officer have concluded that as of the end of that fiscal year, our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and (ii) accumulated and communicated to our management, including our principal executive officer and principal financial officers, to allow timely decisions regarding required disclosure.

It should be noted that while our principal executive officer and principal financial officer believe that our disclosure controls and procedures provide a reasonable level of assurance that they are effective, they do not expect that our disclosure controls and procedures or internal control over financial reporting will prevent all errors or fraud. A control system, no matter how well conceived or operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Exchange Act Rule 13a-15(f). Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our principal executive and financial officer, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

As of December 31, 2020, our management assessed the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (2013 Framework). Based on this assessment, our management concluded that, as of December 31, 2020, our internal control over financial reporting was effective based on those criteria. We are a "smaller reporting company" as defined in Item 10(f)(1) of Regulation S-K under the Securities Act. For as long as we continue to be a smaller reporting company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not smaller reporting companies.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

There were no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the 1934 Act) during our fiscal quarter ended December 31, 2020, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.