A Commercial-stage Pharmaceutical Company Pioneering Novel Cancer Therapies

September 2020
Forward-looking Statements and Other Important Information

This presentation contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Such forward-looking statements include those regarding Karyopharm’s expectations and plans relating to XPOVIO for the treatment of patients with relapsed or refractory multiple myeloma or relapsed or refractory diffuse large B-cell lymphoma; commercialization of XPOVIO or any of its drug candidates and the commercial performance of XPOVIO; submissions to, and the review and potential approval of selinexor by, regulatory authorities; including the Company’s regulatory strategy, the anticipated availability of data to support such submissions, timing of such submissions and actions by regulatory authorities and the potential availability of accelerated approval pathways; the expected design of the Company’s clinical trials; the therapeutic potential of and potential clinical development plans for Karyopharm’s drug candidates, especially selinexor; Karyopharm’s collaboration efforts with third-parties, including the National Cancer Institute; 2020 financial expectations, including forecasted non-GAAP R&D and SG&A expenses; and expectations of the sufficiency of Karyopharm’s existing cash and investments. Such statements are subject to numerous important factors, risks and uncertainties, many of which are beyond Karyopharm’s control, that may cause actual events or results to differ materially from Karyopharm’s current expectations. For example, there can be no guarantee that Karyopharm will successfully commercialize XPOVIO; that regulators will agree that selinexor qualifies for conditional approval in the E.U. as a result of data from the STORM study or confirmatory approval in the U.S. or EU based on the BOSTON study in patients with relapsed or refractory multiple myeloma; or that any of Karyopharm’s drug candidates, including selinexor, will successfully complete necessary clinical development phases or that development of any of Karyopharm’s drug candidates will continue. Further, there can be no guarantee that any positive developments in the development or commercialization of Karyopharm’s drug candidate portfolio will result in stock price appreciation. Management’s expectations and, therefore, any forward-looking statements in this presentation could also be affected by risks and uncertainties relating to a number of other factors, including the following: the risk that the COVID-19 pandemic could disrupt Karyopharm’s business more severely than it currently anticipates, including by reducing sales of XPOVIO, interrupting or delaying research and development efforts, impacting the ability to procure sufficient supply for the development and commercialization of selinexor or other product candidates, delaying ongoing or planned clinical trials, impeding the execution of business plans, planned regulatory milestones and timelines, or inconveniencing patients; the adoption of XPOVIO in the commercial marketplace, the timing and costs involved in commercializing XPOVIO or any of Karyopharm’s drug candidates that receive regulatory approval; the ability to retain regulatory approval of XPOVIO or any of Karyopharm’s drug candidates that receive regulatory approval; Karyopharm’s results of clinical trials and preclinical studies, including subsequent analysis of existing data and new data received from ongoing and future studies; the content and timing of decisions made by the U.S. Food and Drug Administration and other regulatory authorities, investigational review boards at clinical trial sites and publication review bodies, including with respect to the need for additional clinical studies; the ability of Karyopharm or its third party collaborators or successors in interest to fully perform their respective obligations under the applicable agreement and the potential future financial implications of such agreement; Karyopharm’s ability to obtain and maintain requisite regulatory approvals and to enroll patients in its clinical trials; unplanned cash requirements and expenditures; development of drug candidates by Karyopharm’s competitors for diseases in which Karyopharm is currently developing its drug candidates; and Karyopharm’s ability to obtain, maintain and enforce patent and other intellectual property protection for any drug candidates it is developing. 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Agenda

- Company Overview
- Multiple Myeloma
- Diffuse Large B-Cell Lymphoma (DLBCL)
- Additional Opportunities and Highlights
- Appendix: Additional Clinical Data
Karyopharm at a Glance

• Commercial-stage, global pharmaceutical company with one FDA-approved drug in two indications and three additional drug candidates in clinical development

• Industry leader in targeting nuclear export dysregulation as a mechanism to treat cancer

• First drug, XPOVIO® (selinexor), received accelerated approval from the FDA in July 2019 (penta-refractory multiple myeloma)
  • MAA submitted for Europe in January 2019 with decision expected in late-2020

• Pivotal Phase 3 BOSTON study data presented at ASCO 2020 Annual Meeting; Study met primary endpoint of a statistically significant increase in progression-free survival (PFS)
  • sNDA accepted by FDA requesting expansion of label to include treatment for patients with multiple myeloma after at least one prior line of therapy; PDUFA date of March 19, 2021

• Second FDA approval received in June 2020 for the treatment of adult patients with relapsed or refractory diffuse large B-cell lymphoma (DLBCL)

• Encouraging early results in a patient subpopulation from our clinical study evaluating low dose oral selinexor in patients with severe COVID-19; Future development to focus on this subpopulation

• Ongoing clinical development for selinexor and next-generation programs in earlier lines of treatment, in combination trials, and in additional tumor types across both hematologic and solid tumor malignancies

• All programs developed in-house with patent protection on lead compound to 2032+

• Numerous data read-outs and potential key milestones expected over the next 12-24 months
1. Increases nuclear levels and activation of tumor suppressor proteins
2. Traps oncoprotein mRNA in the nucleus leading to reduced oncoprotein levels
3. Retains activated glucocorticoid receptor in the nucleus

Inhibition of XPO1 impacts tumor cells via 3 core mechanisms

Record Quarter for XPOVIO Sales in Q2 2020 and Key Development Milestones Achieved

**Commercial Update**
- Q2 2020 XPOVIO net sales of $18.6M marking highest quarterly sales since launch (total revenues of $33.5M)
- XPOVIO Q2 2020 net sales increase of 16% vs. Q1 2020 driven primarily by increase in demand from multiple myeloma patients
- ~170 new physicians / accounts prescribed XPOVIO for the first time in Q2 2020
- DLBCL launch commenced at end of June with initial prescriptions filled in early July

**Pipeline / Clinical Data Update**
- FDA approval for XPOVIO in DLBCL
- Positive BOSTON Phase 3 data presented at ASCO 2020 Virtual Scientific Program
- sNDA for expanded indication in multiple myeloma accepted by FDA
- Completion of enrollment in Phase 3 SEAL study in liposarcoma and initiation of new clinical trial of selinexor in patients with glioblastoma
- Interim efficacy data from Phase 2 COVID-19 study demonstrates benefit in patient subpopulation; Current study to be discontinued and future development to focus on patient subpopulation

**Corporate Development and Balance Sheet**
- Entered into a Cooperative Research and Development Agreement (CRADA) with the National Cancer Institute’s (NCI) Cancer Therapy Evaluation Program (CTEP) to further develop selinexor across additional tumor types
- Recognized $12.7M in revenue from Antengene as part of territory expansion agreement
- Ended Q2 2020 with $348.2M in cash and investments; cash runway expected to be sufficient to fund planned operations into middle of 2022
Agenda

- Company Overview
- Multiple Myeloma
  - Diffuse Large B-Cell Lymphoma (DLBCL)
  - Additional Opportunities and Highlights
- Appendix: Additional Clinical Data
Multiple Myeloma Represents a Large Opportunity Where Patients are In Need of New Treatment Options

Multiple Myeloma is the 2nd most common cancer of the blood

~32,000 new cases
~130,000 patients living with the disease

The median age at diagnosis is 69

~13,000 deaths expected

U.S. Statistics, 2019

Planned XPOVIO (selinexor) Development Strategy in Multiple Myeloma

Phase 2b STORM study\(^1\) addressing patients with heavily pretreated relapsed refractory multiple myeloma
- Disease refractory to PIs, IMiDs and Darzalex\(^\circledR\)
- High unmet medical need in multiple myeloma

Pivotal Phase 3 BOSTON study addressing patients with relapsed or refractory disease following 1-3 prior lines of therapy
- Selinexor combined with once-weekly Velcade\(^\circledR\) and low-dose dexamethasone

Phase 1b/2 STOMP as a potential backbone therapy in combination with standard approved therapies
- Selinexor and low-dose dexamethasone combined with Revlimid\(^\circledR\), Pomalyst\(^\circledR\), Velcade\(^\circledR\), Kyprolis\(^\circledR\) or Darzalex\(^\circledR\)
- Future Phase 2/3 studies in combination with approved therapies

\(^{1}\) The accelerated approval of XPOVIO was based upon the efficacy and safety in a prespecified subgroup analysis of the 83 patients in STORM whose disease was refractory to bortezomib, carfilzomib, lenalidomide, pomalidomide, and daratumumab, as the benefit-risk ratio appeared to be greater in this more heavily pretreated population than in the overall trial population.
XPOVIO® (selinexor) Received Accelerated Approval in Multiple Myeloma indication by the FDA in July 2019

- XPOVIO is the first and only nuclear export / XPO1 inhibitor approved by the FDA
- XPOVIO is the first and only prescription medicine approved for patients whose multiple myeloma is refractory to proteasome inhibitors, immunomodulatory agents, and an anti-CD38 monoclonal antibody

XPOVIO is indicated in combination with dexamethasone for the treatment of adult patients with relapsed or refractory multiple myeloma (RRMM) who have received at least 4 prior therapies and whose disease is refractory to at least 2 proteasome inhibitors (PI), at least 2 immunomodulatory agents (IMiD), and an anti-CD38 monoclonal antibody (mAb)\(^1\)

This indication is approved under accelerated approval based on response rate. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial. The randomized Phase 3 BOSTON study evaluating selinexor in combination with Velcade® (bortezomib) and low-dose dexamethasone will serve as the confirmatory trial.

Full Prescribing Information and Medication Guide are available at www.XPOVIO.com

\(^1\)XPOVIO Prescribing Information.
Overview of Efficacy Data for Accelerated Approval of XPOVIO (n=83)

Key Efficacy Data in Patient Population Supporting Approval (n=83)¹

25.3% Overall Response Rate (ORR)

Including

- 1 Stringent complete response
- 0 Complete responses
- 4 Very good partial responses
- 16 Partial responses

- Median time to response: 4 weeks
- Median duration of response: 3.8 months

¹ XPOVIO Prescribing Information.
Safety Highlights from the XPOVIO Prescribing Information

• No Black Box Warnings
• No Contraindications
• Patient Medication Guide
• Monitoring Instructions and Recommended Concomitant Treatments
  — Monitor complete blood count (CBC) with differential, standard blood chemistries, body weight, nutritional status, and volume status at baseline and during treatment as clinically indicated. Monitor more frequently during the first three months of treatment
  — Patients advised to maintain adequate fluid and caloric intake throughout treatment. IV hydration should be considered for patients at risk of dehydration
  — Patients receiving XPOVIO should be provided prophylactic treatment with a 5-HT3 receptor antagonist and other anti-nausea agents prior to and during treatment with XPOVIO
  — Recommended XPOVIO dosage reductions and dosage modifications for adverse reactions are included in the Prescribing Information
• Warnings and Precautions
  — Thrombocytopenia
  — Neutropenia
  — Gastrointestinal Toxicity
  — Hyponatremia
  — Serious Infection
  — Neurological Toxicity
  — Embryo-Fetal Toxicity

Full Prescribing Information and Medication Guide available at www.XPOVIO.com
Overview of Safety Data from STORM

Patients who Received XPOVIO 80 mg in Combination with Dexamethasone 20 mg on Days 1 and 3 of Every Week\(^1\) (n=202)

- The most common adverse reactions (incidence ≥20%) were thrombocytopenia, fatigue, nausea, anemia, decreased appetite, decreased weight, diarrhea, vomiting, hyponatremia, neutropenia, leukopenia, constipation, dyspnea, and upper respiratory tract infections

- The treatment discontinuation rate due to adverse reactions was 27%

- 53% of patients had a reduction in the XPOVIO dosage and 65.3% of patients had the dosage of XPOVIO interrupted
  - The most frequent adverse reactions requiring permanent discontinuation in 4% or greater of patients who received XPOVIO included fatigue, nausea, and thrombocytopenia

- The rate of fatal adverse reactions was 8.9%

Full Prescribing Information and Medication Guide are available at www.XPOVIO.com

\(^1\) XPOVIO Prescribing Information.
Rationale to Conduct the BOSTON Study

BOSTON Design

Weekly Selinexor, Velcade, and Dexamethasone (SVd) Versus Standard Twice Weekly Velcade and Dexamethasone (Vd) in Patients with Multiple Myeloma After 1-3 Prior Therapies

• Strong pre-clinical evidence of synergies when combining selinexor and a proteasome inhibitor\textsuperscript{1,2}

• Encouraging efficacy data observed in the Phase 1/2 STOMP study from 42 patients treated with SVd\textsuperscript{3}

• Current standard / indicated treatment of \textit{twice-weekly} Velcade and dexamethasone is frequently reduced to once per week
  
  — Physicians commonly reduce Velcade schedule to once per week in clinical practice due to high incidence of peripheral neuropathy despite most Velcade Phase 3 trials utilizing twice-weekly dosing
  
  — Twice-weekly Velcade requires multiple visits to a physician’s office / clinic which can be particularly challenging for many patients

BOSTON Study: Phase 3, Global, Randomized, Open Label, Controlled Study in Patients with Multiple Myeloma who Had Received 1-3 Prior Therapies

SVd Weekly
35-days cycles
- Selinexor (oral) 100 mg Days 1, 8, 15, 22, 29
- Bortezomib (SC) 1.3 mg/m² Days 1, 8, 15, 22
- Dexamethasone (oral) 20 mg Days 1,2,8,9,15,16,22,23,29,30

Vd BIW
21-days cycles Cycles 1-8
- Bortezomib (SC) 1.3 mg/m² Days 1, 4, 8, 11
- Dexamethasone (oral) 20 mg Days 1,2,4,5,8,9,11,12

If IRC confirmed PD: crossover to SVd or Sd permitted

Vd Weekly*
35-Days cycles Cycles ≥9
- Bortezomib (SC) 1.3 mg/m² Days 1, 4, 8, 11
- Dexamethasone (oral) 20 mg Days 1,2,4,5,8,9,11,12

Planned 40% higher bortezomib and 25% higher dexamethasone dose at 24 weeks (8 cycles) in Vd arm vs. SVd arm

Primary endpoint: PFS
Key Secondary Endpoints:
- ORR
- ≥VGPR
- grade ≥2 PN

Secondary endpoints:
- OS
- DoR
- TTNT
- Safety

Efficacy Assessed by IRC

CR= complete response, DoR = duration of response, IMWG = International Myeloma Working Group, IRC = Independent Review Committee, OS = overall survival, PD = progressive disease, PFS = progression free survival, PR = partial response, PN = peripheral neuropathy, sCR = stringent complete response, TTNT = time to next therapy, VGPR = very good partial response. PFS defined as: Time from date of randomization until the first date of progressive disease, per IMWG response criteria, or death due to any cause, whichever occurred first, as assessed by IRC. ORR: Any response ≥PR (ie, PR, VGPR, CR, or sCR) based on the IRC’s response outcome assessments, according to IMWG response criteria (Kumar et al. Lancet oncology 2016). All changes in MM disease assessments were based on baseline MM disease assessments.

*Vd weekly dosing and schedule for cycles≥ 9 as per SVd arm description.
Progression Free Survival (PFS) Significantly Longer with SVd Compared to Vd

Median PFS (mos)  
SVd: 13.93  
Vd: 9.46

Early and Sustained PFS Benefit (Assessed by IRC)

Hazard Ratio:* 0.70, \( P=0.0075 \)  
30% reduced risk of progression/death with SVd


 Median follow-up: 13.2 and 16.5 months in SVd and Vd arms, respectively
Consistent PFS Benefit for SVd Across Subgroups

<table>
<thead>
<tr>
<th>Subgroups</th>
<th># Patients</th>
<th>Overall</th>
<th>HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;65 years</td>
<td>161</td>
<td></td>
<td>0.74 (0.49–1.11)</td>
</tr>
<tr>
<td>≥65 years</td>
<td>241</td>
<td></td>
<td>0.55 (0.37–0.83)</td>
</tr>
<tr>
<td><strong>Frailty</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frail</td>
<td>130</td>
<td></td>
<td>0.69 (0.40–1.17)</td>
</tr>
<tr>
<td>Fit</td>
<td>272</td>
<td></td>
<td>0.66 (0.47–0.93)</td>
</tr>
<tr>
<td><strong>No. of Prior Lines of Therapy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>198</td>
<td></td>
<td>0.63 (0.41–0.95)</td>
</tr>
<tr>
<td>2–3</td>
<td>204</td>
<td></td>
<td>0.69 (0.48–1.01)</td>
</tr>
<tr>
<td><strong>Previous PI Therapies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>307</td>
<td></td>
<td>0.78 (0.58–1.06)</td>
</tr>
<tr>
<td>No</td>
<td>95</td>
<td></td>
<td>0.26 (0.11–0.60)</td>
</tr>
<tr>
<td><strong>Previous Lenalidomide Therapy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>154</td>
<td></td>
<td>0.63 (0.41–0.97)</td>
</tr>
<tr>
<td>No</td>
<td>248</td>
<td></td>
<td>0.66 (0.45–0.96)</td>
</tr>
<tr>
<td><strong>High-risk Cytogenetics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes Del[17p] or [4;14] or [14;16] or 1q21</td>
<td>192</td>
<td></td>
<td>0.67 (0.45–0.98)</td>
</tr>
<tr>
<td>No</td>
<td>210</td>
<td></td>
<td>0.62 (0.42–0.95)</td>
</tr>
<tr>
<td>Del[17p]</td>
<td>37</td>
<td></td>
<td>0.38 (0.16–0.86)</td>
</tr>
</tbody>
</table>


SVd Was Associated With a Significantly Higher ORR Overall and Across Patient Subgroups

One-sided P values for the Cochran-Mantel-Haenszel Test based on unstratified model. Data cut-off February 18, 2020. ORR = Overall Response, based on Independent Review Committee’s (IRC) response outcome assessments, according to IMWG response criteria (Kumar et al. Lancet Oncology 2016). All changes in MM disease assessments were based on baseline MM disease assessments.

SVd Was Associated With Significantly Higher Rate of Deep Responses (≥VGPR, p=0.0082)

SVd arm (n=165) Vd arm (n=149)

Median Time to Response (months)†
1.1 1.4

Median Duration of Response (months)*
20.3 12.9

Longer Duration of Response with SVd

Fewer Patients with Progressive Disease:
SVd (n=1, 0.5%) vs Vd (n=10, 4.8%)

CR= complete response, MR = minimal response, PD = progressive disease, PR = partial response, sCR = stringent complete response, SD = stable disease, VGPR = very good partial response. All responses assessed by an Independent Review Committee (IRC), according to the IMWG criteria (Kumar et all. Lancet Oncology 2016). †Unadjusted Time from date of randomization until first response per IMWG response criteria. *Duration of the time interval between the first IRC-confirmed PR or better response and the first IRC-confirmed PD or death due to any cause, whichever occurred first. Data cut-off February 18, 2020.
**Overall Survival Interim Analysis (109 Deaths [27%])**

### # Death Events (n)
- **SVd Arm**: 47
- **Vd Arm**: 62

### Median OS (mos)
- **SVd Arm**: Not Reached
- **Vd Arm**: 25

### HR 0.84 (95% CI: 0.57, 1.23) \( P=0.19 \)

**OS = Overall Survival, Data cut-off February 18, 2020.**

Peripheral Neuropathy Rates were Significantly Lower with SVd than with Vd

Peripheral neuropathy was the most common adverse event (AE) leading to treatment discontinuation: 4.6% on SVd, 7.4% on Vd

Selected Hematological Treatment Emergent Adverse Events (TEAEs)*

<table>
<thead>
<tr>
<th>Hematological (%)</th>
<th>SVd (n=195)</th>
<th>Vd (n=204)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any Grade</td>
<td>Grade 3/4</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade ≥3 Bleeding</td>
<td>60.0†</td>
<td>39.5</td>
</tr>
<tr>
<td></td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>36.4</td>
<td>15.9</td>
</tr>
<tr>
<td>Neutropenia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Febrile Neutropenia</td>
<td>14.9</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

- Thrombopoietin receptor agonists were used to mitigate thrombocytopenia in 35 patients on SVd and 2 patients on Vd, and reduced dose interruptions and reductions
- 12 patients on SVd and 13 patients on Vd received platelet transfusions to manage thrombocytopenia

*Shown are adverse events that occurred in at least 10% of patients and had a >5% difference between treatment arms. Adverse events were graded according to the National Cancer Institute Common Terminology Criteria for Adverse Events, version 4.03. For patients who crossed over, adverse events that occurred after the crossover are not included.
†Includes 3 fatal events. Data cut-off February 18, 2020.

### Selected Non-Hematological TEAEs*

<table>
<thead>
<tr>
<th>Non-hematological (%)</th>
<th>SVd (n=195)</th>
<th>Vd (n=204)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any Grade</td>
<td>Grade 3/4</td>
</tr>
<tr>
<td>Nausea</td>
<td>50.3</td>
<td>7.7</td>
</tr>
<tr>
<td>Fatigue</td>
<td>42.1</td>
<td>13.3</td>
</tr>
<tr>
<td>Decreased Appetite</td>
<td>35.4</td>
<td>3.6</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>32.3</td>
<td>6.2</td>
</tr>
<tr>
<td>Peripheral Neuropathy†</td>
<td>32.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Upper Respiratory Tract Infection‡</td>
<td>29.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Weight decreased</td>
<td>26.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Asthenia</td>
<td>24.6</td>
<td>8.2</td>
</tr>
<tr>
<td>Cataract§</td>
<td>21.5</td>
<td>8.7</td>
</tr>
<tr>
<td>Vomiting</td>
<td>20.5</td>
<td>4.1</td>
</tr>
</tbody>
</table>

*Shown are adverse events that occurred in at least 15% of patients and had a >5% difference between treatment arms. Adverse events were graded according to the National Cancer Institute Common Terminology Criteria for Adverse Events, version 4.03. For patients who crossed over, adverse events that occurred after the crossover are not included. †Includes high-level term Peripheral Neuropathies NEC. ‡Includes upper respiratory infection, nasopharyngitis, pharyngitis, respiratory syncytial virus infection, respiratory tract infection, rhinitis and viral upper respiratory tract infection. §Per ophthalmology exam during which 24% of patients on the SVd arm versus 8.5% of patients on the Vd arm had new-onset cataracts and worsening of cataracts on study was noted in 20.5% patients on the SVd arm versus 7.9% on the Vd arm. Data cut-off February 18, 2020.

Expected Future Trend in 1st line Treatment May Create Significant Opportunity for XPOVIO in the 2nd line

1XPOVIO is currently only approved by the FDA in combination with dexamethasone for the treatment of adult patients with relapsed or refractory multiple myeloma (RRMM) who have received at least 4 prior therapies and whose disease is refractory to at least 2 proteasome inhibitors (PI), at least 2 immunomodulatory agents (IMiD), and an anti-CD38 monoclonal antibody (mAb). The schematic illustrated above represents what a treatment paradigm might look like should XPOVIO be approved by the FDA as 2nd Line+ treatment in multiple myeloma in combination with Velcade and dexamethasone.
Selinexor and backbone Treatments Of multiple Myeloma Patients (STOMP): Multi-center, open-label, dose escalation (Phase 1) and expansion (Phase 2) study to assess the MTD, efficacy, and safety of selinexor in patients with RRMM.
Additional XPOVIO Triplet Regimens Indicate Additive or Synergistic Activity Compared to Benchmark Doublet Regimens

- Selinexor is currently being studied in the ongoing STOMP Phase 1b/2 trial evaluating selinexor and low-dose dexamethasone in combination with one of several standard approved myeloma therapies in patients with relapsed or refractory multiple myeloma.

<table>
<thead>
<tr>
<th>STOMP Trial</th>
<th>Benchmark Data</th>
</tr>
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<tbody>
<tr>
<td><strong>STOMP Triplet Regimen</strong></td>
<td><strong>Efficacy Data</strong></td>
</tr>
<tr>
<td>Selinexor + Kyprolis + dex</td>
<td>ORR = 71%1</td>
</tr>
<tr>
<td>(median 3 lines of prior therapy)</td>
<td></td>
</tr>
<tr>
<td>Selinexor + Darzalex + dex</td>
<td>ORR = 73%2</td>
</tr>
<tr>
<td>(Darzalex-naïve)</td>
<td></td>
</tr>
<tr>
<td>Selinexor + Pomalyst + dex</td>
<td>ORR = 56%3</td>
</tr>
<tr>
<td>(Pomalyst-naïve and Revlimid relapsed or refractory)</td>
<td>PFS = 12.2 months3</td>
</tr>
<tr>
<td>Selinexor + Revlimid + dex</td>
<td>ORR = 92%4</td>
</tr>
<tr>
<td>(Revlimid-naïve)</td>
<td></td>
</tr>
</tbody>
</table>

Provides strong rationale for further clinical investigation of selinexor in combination with standard, approved therapies9

Note: The STOMP study does not include any arms studying current myeloma backbone therapies without the combination of selinexor. The purpose of displaying the “Benchmark” data above is to highlight that the clinical results from STOMP reported to date strongly support ongoing / additional clinical investigation of selinexor in combination regimens.

Commercial Opportunity

• Multiple Myeloma
Highly Experienced Team Educating the Market About XPOVIO

**Customer-Facing Field Force**

- ~70 sales representatives and nurse liaisons supporting commercial launch
  - ~20 average years of pharmaceutical experience
  - ~12 average years of hematology / oncology experience
  - ~5 average years of MM experience
- Experienced account management team responsible for payors and distribution partners
- Extensive patient and HCP support program anchored by KaryForward™ platform

**Prescriber Base**

- ~400 accounts generate ~50% of all prescriptions for MM drugs
- ~1,300 accounts generate ~80% of all prescriptions for MM drugs
- Top accounts generally consist of larger academic institutions and multi-site community oncology practices

---

1 Based on analysis of Symphony Claims data.
Background on the Treatment of Multiple Myeloma

• Main classes of MM drugs used across lines of therapy include:
  ─ Proteasome inhibitors (PIs): Velcade® (bortezomib), Kyprolis® (carfilzomib)
  ─ Immunomodulatory agents (IMiDs): Revlimid® (lenalidomide), Pomylast® (pomalidomide)
  ─ Monoclonal antibodies (mAbs): Darzalex® (daratumumab), Empliciti® (elotuzumab)
  ─ Nuclear export inhibitor: XPOVIO® (selinexor) is the only drug in this class and is currently approved in heavily pretreated patients

• Drugs with proven single-agent clinical activity are generally preferred by physicians, even when used in 2-4 drug-combination regimens
  ─ Single agent (± steroids) activity: Revlimid®, Pomalyst®, Darzalex®, Velcade®, Kyprolis®, XPOVIO®
  ─ Used in combination: Alkylators, Glucocorticoids, Empliciti®

• Velcade®, a proteasome inhibitor, is a well-established treatment for patients in early and late lines of treatment, typically in combination with dexamethasone and either an IMiD or mAb

• Standard Velcade® therapy is dosed twice per week and administered as a subcutaneous injection
  ─ Prolonged usage is often limited due to its main adverse reaction, peripheral neuropathy, or due to acquired resistance

Patients and physicians demand new options with increasing efficacy and novel mechanisms of action
An additional 60,000+ patients not on active treatment or in long-term remission during the year

Number of patients with relapsed or refractory disease is growing annually, on a percentage basis, by mid-single digits due to population growth and increased life expectancy as a result of newly available treatment options.
XPOVIO Quarterly Sales

- ~3,200 prescriptions (RXs) filled from launch through June 30, 2020
- 12% increase in prescription demand and 16% increase in net sales in Q2 2020 compared to Q1 2020
- Incremental inventory build in distribution channel in Q2 to support DLBCL launch
- Q2 2020 was the strongest quarter to date for both net sales and patient demand
Key XPOVIO Patient Metrics Continue to Improve in Each Subsequent Quarter Since Launch

**Average Treatment Cycles (RXs) Per Patient**

- Sept 2019: 1.6
- Dec 2019: 2.0
- Mar 2020: 2.4
- June 2020: 2.7

**Prescription Refill Rate for 1st and 2nd Prescription (Only Includes Patients Eligible for a Refill)**

- 1st Refill:
  - Sept 2019: 42%
  - Dec 2019: 56%
  - Mar 2020: 57%
  - June 2020: 56%

- 2nd Refill:
  - Sept 2019: 36%
  - Dec 2019: 52%
  - Mar 2020: 52%
  - June 2020: 61%

1 Based on patient data from Karyopharm’s network of specialty pharmacy providers.
Most Impactful Features of XPOVIO for Physicians Treating Patients with Relapsed Refractory Multiple Myeloma

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rapid response</td>
<td>Patients rapidly responded to XPOVIO combination therapy (STORM study) at a median of 4 weeks, with some responses as early as 1 week</td>
</tr>
<tr>
<td>2. Meaningful ORR in challenging-to-treat populations</td>
<td>25.3% ORR in the challenging-to-treat STORM population is compelling, especially as 100% of patients were refractory to daratumumab and 57% had high risk cytogenetics</td>
</tr>
<tr>
<td>3. Novel mechanism of action</td>
<td>Overexpression of XPO1 is a key mechanism of oncogenesis; XPOVIO is the first and only FDA-approved oral XPO1 inhibitor that selectively binds to and blocks XPO1</td>
</tr>
<tr>
<td>4. Preventable, manageable, and reversible adverse reaction profile</td>
<td>Prophylactic treatments and dose modifications can be effective at preventing and managing most adverse reactions</td>
</tr>
</tbody>
</table>

*Karyopharm market research, July 2020, N=100.
No Dominant MM Drug Regimen in 2nd Line+ Setting With Numerous Drug Combinations Used to Meet Individual Patient Needs

MM Drug Regimens by Line of Treatment (U.S.)

Bars are not mutually exclusive; a regimen containing two drugs would appear in bars for both agents

R = Revlimid, V = Velcade, D = Darzalex, K = Kyprolis, N = Ninlaro, E = Empliciti, P = Pomalyst

1 Karyopharm market research (Post Launch ATU Survey Wave 2 (Mar 20), N=120). 2 Note: Patients typically receive multiple drugs in each line of therapy so many patients in 4th line and some in 3rd line will be refractory to 5 or more individual drugs.
Drugs with Stand-Alone (± Steroid) Anti-MM Activity and Approved for 1\textsuperscript{st} or 2\textsuperscript{nd} Line Treatment have Achieved ≥$1B in Annual Sales

2019 Worldwide Sales\textsuperscript{1}

- **Immunomodulatory Agents**
  - Revlimid: $11B
  - Pomalyst: $2.5B

- **Proteasome Inhibitors**
  - Velcade: $1.6B
  - Kyprolis: $1B

- **Monoclonal Antibodies**
  - Darzalex: $3B

\textsuperscript{1}EvaluatePharma, February 2020.

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Agenda

• Company Overview
• Multiple Myeloma
  • Diffuse Large B-Cell Lymphoma (DLBCL)
• Additional Opportunities and Highlights
• Appendix: Additional Clinical Data
DLBCL Represents an Additional Large Opportunity Where Patients are In Need of New Treatment Options

DLBCL is the most common form of Non Hodgkin's Lymphoma (NHL)

~32,000 new cases expected annually

40-50% of patients are not cured by currently available treatment options

~63% of patients survive 5 years or longer

U.S. Statistics

XPOVIO (selinexor) is indicated for the treatment of adult patients with relapsed or refractory diffuse large B-cell lymphoma (DLBCL), not otherwise specified, including DLBCL arising from follicular lymphoma, after at least 2 lines of systemic therapy.¹

This indication is approved under accelerated approval based on response rate. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial(s).

• XPOVIO is now the only single-agent, oral therapy approved for the treatment of patients with relapsed or refractory DLBCL

• XPOVIO is the first and only Nuclear Export Inhibitor approved by the FDA for use in two hematologic malignancies (multiple myeloma and DLBCL)

Full Prescribing Information and Medication Guide available at www.XPOVIO.com

¹XPOVIO Prescribing Information
SADAL¹: A Phase 2b Study In DLBCL

FDA Approved on June 22, 2020

N=134

Relapsed or Refractory or Transformed DLBCL

- Study included patients with at least two prior multi-agent therapies and who were ineligible for transplantation
- Included patients with Germinal Center B-Cell (GCB) and non-GCB subtypes

Oral Selinexor | 60 mg
selinexor twice weekly
(4 week cycle)

¹ Selinexor Against Diffuse Aggressive Lymphoma
### OVERALL RESPONSE RATES\(^1,2\)

<table>
<thead>
<tr>
<th>Genetic Subsets</th>
<th>All Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29%</td>
</tr>
<tr>
<td>Genetic Subsets</td>
<td></td>
</tr>
<tr>
<td>GCB (n=59)</td>
<td>34%</td>
</tr>
<tr>
<td>non-GCB (n=63)</td>
<td>21%</td>
</tr>
</tbody>
</table>

**CRs 13%**

**PRs 16%**

### ADDITIONAL ENDPOINTS\(^2\)

**Duration of Response**

- Median DOR was 9.3 months
- Most responses at first scan (~2 months)

**Overall Survival**

- All patients (n=127) = 9.1 months
- Patients with CR or PR (n=36) = Not Yet Reached
- Patients with stable disease (n=11) = 18.3 months
- Patients with Progressive Disease or No Response (n=80) = 4.3 months

### Safety:

- Most common treatment related non-hematologic adverse events (AEs) were fatigue, nausea, decreased appetite, and diarrhea, primarily Grade 1/2, and most were manageable with dose modifications and/or supportive care
- Most common Grade 3/4 AEs were thrombocytopenia, lymphopenia, neutropenia, and anemia, and most were also manageable with dose modifications and/or supportive care

---


An Estimated 9,000 DLBCL Patients Being Treated in the 3rd and 4th Line+ Setting in the U.S.

Number of patients with relapsed or refractory disease is growing annually, on a percentage basis, by low to mid-single digits due to population growth and increased life expectancy as a result of newly available treatment options.

Total U.S. Drug Sales in Relapsed or Refractory DLBCL Expected to Grow from $762M in 2018 to Over $3B by 2028

1 Decision Resources NHL and CLL Landscape and Forecast, 2019
Commercial Strategy for XPOVIO in DLBCL

XPOVIO Positioning

• Successfully launch XPOVIO as the preferred DLBCL treatment option after two prior lines of therapy instead of traditional intravenous chemotherapy by educating physicians on the deep and durable efficacy achieved in clinical studies with oral, single-agent, novel, XPOVIO

• XPOVIO offers compelling efficacy with a manageable safety profile and is now:
  • First oral therapy approved for RR DLBCL
  • First single agent approved in any line of DLBCL treatment
  • First therapy a RR DLBCL patient can take at home

Prescriber Base\(^1\)

• ~3,000 physicians treat ~80% of U.S. DLBCL patients
  • ~75% of targeted physicians are community-based
• >50% overlap between Karyopharm’s multiple myeloma and DLBCL targets
• Karyopharm U.S. sales force of ~70 already sized to reach core physician audience

\(^1\) Based on analysis of Symphony claims data
Key Features of XPOVIO for the Treatment of Patients With RR DLBCL

Factors That Influence Treatment Choice

- Clinical efficacy
- Previous therapies / approaches
- Subtype and histology
- Comorbidities
- Functional status, age, frailty
- Patient preferences / logistical dynamics

Key Features of XPOVIO

- 29% ORR\(^1\)
- 13% CR\(^1\)
  - Clinically meaningful duration of response\(^1\)

Novel mechanism of action

Similar efficacy seen across both ABC and GCB patient sub-types

Common adverse events do not include:
- Peripheral neuropathy
- Cardiac, liver or kidney toxicity
- Opportunistic infections

- Oral route of administration taken only twice per week
- Single agent, not combined with chemotherapy

\(^1\)XPOVIO Prescribing Information
Agenda

- Company Overview
- Multiple Myeloma
- Diffuse Large B-Cell Lymphoma (DLBCL)
- Additional Opportunities and Highlights
- Appendix: Additional Clinical Data
Scientific Rationale for Evaluating Selinexor in COVID-19

- XPO1 inhibitors have previously demonstrated preclinical activity against >20 viruses, including influenza, RSV and other viral respiratory infections
- XPO1 was identified as one of the host proteins with the highest number of functional connections with SARS-CoV proteins¹
- Selinexor demonstrated potent inhibition of SARS-CoV2 propagation in monkey Vero cells inhibiting the production of new virus by 90% at a low concentration (100 nM) from cells infected with SARS-CoV2²
  - Additionally, even lower levels of selinexor (only 10nM) reduced the ability of the virus to infect new cells by about 99%
- Blockade of XPO1 amplifies the activities of anti-inflammatory transcription factors: IκB, PPARγ, RXRa, and others
- Verdinexor (closely related SINE compound to selinexor) treatment (low dose) delayed up to 4 days after influenza virus infection in mice showed marked anti-viral and anti-inflammatory activity and improved survival
- The severity of COVID-19, caused by SARS-CoV2, is associated with high levels of pro-inflammatory cytokines
  - Selinexor protects against LPS-induced sepsis in mice, ameliorated lung injury and reduced serum levels TNFα, IL-6 and HMGB-1

¹ Zhou Y, et. al. Cell Discovery. 2020. ² Ralph A. Tripp, Ph.D., University of Georgia.
A Phase 2 Randomized, Single-Blind Study to Evaluate the Activity and Safety of Low Dose Oral Selinexor in Patients with Severe COVID-19 (NCT04349098)

~40 International Study Sites, ~10 countries

1:1 randomization  
N ~ 230  
Hospitalized patients ≥18 years old with COVID-19

**Primary endpoints:** Day 14 Ordinal Scale Improvement (OSI)
Proportion of patients with at least a 2 point improvement (increase) in the Ordinal Scale from baseline (defined as the time from randomization, or lower score within 24 hours of randomization) to Day 14

**Key secondary endpoints**
- Time to Clinical Improvement (time from randomization or lower score within 24 hrs, to improvement of 2 points on Ordinal Scale)
- Overall Death Rate on Day 28
- Rate of mechanical ventilation
- Time to mechanical ventilation

**Oral Selinexor**
20 mg Days 1, 3, and 5 of each week for up to 2 weeks
If the patient is tolerating therapy well and clinically benefitting, dosing can continue for additional 2 weeks on Days 15, 17, 19, 22, 24, 26

**Oral Placebo**
Days 1, 3, and 5 of each week for up to 2 weeks

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Phase 2 COVID-19 Study Demonstrates Activity in Specific Patient Subpopulation in Interim Analysis Conducted in July 2020

- 115 patients included in the efficacy analysis and 113 patients included in the safety analysis

- Data Safety Monitoring Board (DSMB) concluded trial was likely to show a benefit in subpopulation of patients <75 years old who have a COVID-GRAM non-high risk score
  - Preliminary results indicate that in the specific subpopulation, a two-point improvement in Ordinal Score at Day 14 reached statistical significance, as did the two-point improvement in Ordinal Score by Day 28 and the rate of hospital discharge by Day 14 (all p≤0.05)
  - While rate of fatalities in the study were imbalanced in patients ≥75 years old or with a COVID-GRAM high risk score, after a detailed review, DSMB considered deaths on study were due to severe COVID-19 disease and/or underlying comorbidities without a clear contribution of selinexor

- DSMB concluded the trial, as currently designed, is unlikely to demonstrate a statistically significant efficacy benefit across the entire patient population

Next Steps

- Discontinue current study
- Further characterize specific subpopulation likely to benefit from selinexor and work with FDA to develop path forward
- Future clinical development to focus on patient subpopulation
  - Seek potential partner(s) and external funding for future development
Current Partnerships

Commercial partnerships to serve global markets

**Antengene Corporation**
Licensing partner for selinexor, eltanexor, verdinexor and KPT-9274 in China, South Korea, Taiwan, Australia and other Asia-Pacific markets, with the exception of Japan\(^1\)

**Neopharm Group**
Exclusive distribution agreement for the commercialization of XPOVIO in Israel and the Palestinian Authority\(^2\)

**Europe, Japan and Other Key Markets**
Seeking potential collaboration arrangements with commercial partners; analyzing potential for Karyopharm to commercialize in select European markets

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\(^1\) Original transaction in May 2018 for China and some other Asian markets; territory agreement was expanded in May 2020 to include additional Asia-Pacific markets.

\(^2\) In February 2020, Karyopharm and Promedico, a fully-owned Neopharm LTD company, entered into an exclusive distribution agreement in Israel and the Palestinian Authority.
# Karyopharm’s Novel Pipeline | Selinexor

## Hematologic Malignancies - Selinexor

<table>
<thead>
<tr>
<th>Condition</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Myeloma (relapsed/refractory)</td>
<td>STORM</td>
<td>FDA Approved (Accelerated Approval)¹</td>
<td></td>
</tr>
<tr>
<td>Multiple Myeloma (relapsed/refractory)</td>
<td>BOSTON²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffuse Large B-cell Lymphoma (relapsed/refractory)</td>
<td>SADAL</td>
<td>FDA Approved (Accelerated Approval)¹</td>
<td></td>
</tr>
<tr>
<td>Multiple Myeloma (relapsed/refractory and front-line)</td>
<td>STOMP³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffuse Large B-cell Lymphoma (combination with rituximab-gemcitabine-dexamethasone-platinum (R-GDP))</td>
<td>XPORT-DLBCL-030⁴</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffuse Large B-cell Lymphoma (combination with chemo and non-chemo regimens)</td>
<td>XPORT-DLBCL-025⁴</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Solid Tumor Malignancies - Selinexor

<table>
<thead>
<tr>
<th>Condition</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liposarcoma (advanced unresectable dedifferentiated liposarcoma)</td>
<td>SEAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endometrial Cancer (maintenance therapy)</td>
<td>SIENDO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRC (combination with pembrolizumab) and NSCLC (combination with docetaxel)</td>
<td>XPORT-STP-027</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Glioblastoma Multiforme (GBM) - Selinexor

<table>
<thead>
<tr>
<th>Condition</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glioblastoma (recurrent gliomas)</td>
<td>KING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glioblastoma (combination with active agents / newly diagnosed or recurrent)</td>
<td>XPORT-GBM-029</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## COVID-19 - Low Dose Selinexor⁵

<table>
<thead>
<tr>
<th>Condition</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 (Hospitalized patients with severe COVID-19)</td>
<td>XPORT-CoV-1001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Full Prescribing Information and Medication Guide are available at [www.XPOVIO.com](http://www.XPOVIO.com). ² Oral selinexor, Velcade® (bortezomib) and dexamethasone vs. Velcade and dexamethasone. ³ Oral selinexor and dexamethasone + Revlimid® (lenalidomide), Pomalyst® (pomalidomide), Velcade, Kyprolis® (carfilzomib) or Darzalex® (daratumumab). ⁴ Study expected to start in 2020. ⁵ Following interim analysis conducted in July 2020, study to be discontinued.

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Karyopharm’s Novel Pipeline | Eltanexor, KPT-9274 and Verdinexor

### Additional Oncology Programs - Eltanexor and KPT-9274

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Myelodysplastic Syndromes (MDS) (single agent or in combination with hypomethylating agents)</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug: Eltanexor</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Colorectal Cancer (CRC) and Prostate Cancer (PrC)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug: Eltanexor</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solid Tumors &amp; AML</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug: KPT-9274</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Infectious Diseases & Autoimmune Disorders - Verdinexor

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthy Human Volunteers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**Systemic Lupus Erythematosus (SLE)</td>
<td>VALOR-SLE-705&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Severe Influenza, Respiratory Syncytial Virus (RSV), HIV Inflammation, Spinal Cord Injury</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> Study expected to start in 2020. <sup>2</sup> Study start pending submission and acceptance of IND.
Selinexor in Solid Tumor Malignancies

**Selinexor in Liposarcoma**
- Enrollment completed in Phase 3 SEAL study; randomized, double-blind trial evaluating single-agent selinexor versus placebo in patients with advanced unresectable dedifferentiated liposarcoma after at least two systemic therapies
- Primary endpoint: PFS (crossover from placebo to selinexor is allowed)
- Top-line data expected in second half of 2020
- Selinexor achieved PFS of 5.5 months versus 2.7 months for placebo in Phase 2 (n=56), HR=0.67 (RECIST v1.1)

**Selinexor in Endometrial Cancer**
- Ongoing Phase 3 SIENDO study; transitioned to a company-sponsored trial (2019) evaluating once weekly selinexor as a maintenance therapy versus placebo in patients with endometrial cancer after first-line chemotherapy
- Achieved 35% DCR, 3 months mPFS and 7 months mOS in Phase 2 SIGN study (n=23)

Other Pipeline Programs

**Eltanexor (KPT-8602)**
- Oral, 2nd generation SINE compound
- Preclinical results show substantially less brain penetration versus selinexor
- Evaluated in Phase 1/2 study in myelodysplastic syndrome (MDS), colorectal cancer (CRC) and metastatic castrate-resistant prostate cancer (mCRPC)
- Reported updated data from Phase 1 portion at ASH 2017, CRC data at ESMO 2018, mCRPC data at ASCO-GU 2019 and MDS data at ASH 2019
- Additional clinical development planned in MDS
- Adverse events were generally consistent with other studies to date in >50 patients

**KPT-9274**
- Oral dual Inhibitor of PAK4 and NAMPT
- In Phase 1 clinical testing in advanced solid tumors
- Generally well tolerated (n=21) with early signals of anti-tumor activity
- Additional supportive preclinical research presented at ASH 2017
Financial Highlights

$348M
Cash, cash equivalents, restricted cash and investments

Into Middle of 2022

73M
86M fully diluted

BALANCE SHEET 30-Jun-2020¹

EXPECTED RUNWAY WITH CASH ON HAND¹

SHARES OUTSTANDING 30-Jun-2020¹

¹ Second Quarter Financial Results, 08/4/20.
Numerous Expected Key Milestones for XPOVIO / Selinexor in 2020

**Early 2020**

1. Top-line Phase 3 data from BOSTON study
2. Initiation of randomized, global clinical trial in patients with severe COVID-19

**Mid-Late 2020**

1. BOSTON data presentation at ASCO 2020
2. sNDA submission based on data from BOSTON study
3. Regulatory decision from FDA based on DLBCL sNDA
4. U.S. commercial launch in DLBCL
5. Initial results from COVID-19 clinical trial
6. European regulatory submissions (STORM, BOSTON)
7. Top-line Phase 3 data from SEAL study in liposarcoma and subsequent regulatory submissions
8. Start of confirmatory Phase 3 Study in DLBCL in support of accelerated approval

---

1 Subject to positive Phase 3 results.
Thank You
Agenda

- Company Overview
- Multiple Myeloma
- Diffuse Large B-Cell Lymphoma (DLBCL)
- Additional Opportunities and Highlights

- Appendix: Additional Clinical Data
STORM Study: Patients Studied in Part 2 of STORM Study Had Highly Refractory Disease and Included Patients With Significant Co-Morbidities

<table>
<thead>
<tr>
<th>Key Patient Characteristics¹,²</th>
<th>Broad Enrollment Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(n=83)</strong></td>
<td></td>
</tr>
<tr>
<td>Refractory to all five of the standard of care myeloma drugs: bortezomib, carfilzomib, lenalidomide, pomalidomide, and daratumumab</td>
<td>100%</td>
</tr>
<tr>
<td>Refractory to 2 PIs, 2 IMIDs, and daratumumab</td>
<td>100%</td>
</tr>
<tr>
<td>Prior treatment regimens, median (range)</td>
<td>8 (4-18)</td>
</tr>
<tr>
<td>High-risk Cytogenetics (Includes any of del(17p)/p53, t(14; 16), t(4; 14), 1q21)</td>
<td>57%</td>
</tr>
</tbody>
</table>

- No upper age limit (included patients > 75 years old)
- Moderate-to-severe renal dysfunction
- Hematopoietic function with up to Grade 2 cytopenia
  - ANC ≥ 1000/mm³
  - Hemoglobin ≥ 8.5g/dL
  - Platelets ≥ 75,000/mm³ or ≥ 50,000/mm³ if 50% marrow plasmacytosis
- Permitted prior infections, thromboembolism, heart disease, and concomitant medications

STORM study was a single-arm clinical trial in which patients received oral XPOVIO 80 mg and dexamethasone 20 mg, twice weekly

¹XPOVIO Prescribing Information.
²The accelerated approval of XPOVIO was based upon the efficacy and safety in a prespecified subgroup analysis of the 83 patients whose disease was refractory to bortezomib, carfilzomib, lenalidomide, pomalidomide, and daratumumab, as the benefit-risk ratio appeared to be greater in this more heavily pretreated population than in the overall trial population.
The accelerated approval of XPOVIO was based upon the efficacy and safety in a prespecified subgroup analysis of the 83 patients whose disease was refractory to bortezomib, carfilzomib, lenalidomide, pomalidomide, and daratumumab, as the benefit-risk ratio appeared to be greater in this more heavily pretreated population than in the overall trial population.1


71% of patients had a reduction in disease burden

Overall Survival by Group3

15.6 months
8.6 months
1.7 months

* ≥MR = Patients had a minor response or better; at least a 25% decrease in M protein
** PD/NE = Patients had progressive disease or disease not evaluable

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STOMP¹: A Phase 1b/2 Study in Myeloma

In combination with a proteasome inhibitor

Selinexor + Velcade® + dex (SVD)²
(n=19 "BOSTON" Type Patients)

<table>
<thead>
<tr>
<th>Overall Response Rate</th>
<th>PFS (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>20</td>
</tr>
<tr>
<td>75%</td>
<td>17.8</td>
</tr>
<tr>
<td>50%</td>
<td>15</td>
</tr>
<tr>
<td>25%</td>
<td>10</td>
</tr>
<tr>
<td>0%</td>
<td>5</td>
</tr>
</tbody>
</table>

Selinexor + Kyprolis® + dex (SDd)³
(n=14 / Median of 4 prior regimens)

<table>
<thead>
<tr>
<th>Overall Response Rate</th>
<th>Overall Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>75%</td>
</tr>
<tr>
<td>75%</td>
<td>71%</td>
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Provides strong rationale for further clinical investigation of selinexor in combination with standard, approved therapies⁸

Note: The STOMP study does not include any arms studying current myeloma backbone therapies without the combination of selinexor. The purpose of displaying the “Benchmark” data above for Velcade and Kyprolis is to highlight that the clinical results from STOMP reported to date strongly support ongoing / additional clinical investigation of selinexor in combination regimens.

Safety:

- AEs consistent with those reported from other selinexor studies
- Most common Grade 1/2 AEs were constitutional symptoms (e.g. nausea, fatigue, anorexia)
- Most common Grade 3/4 AEs were cytopenias (e.g. thrombocytopenia, neutropenia, anemia)
- In the selinexor + Velcade+ dex arm (SVD), peripheral neuropathy across all patients was Grade 1/2 and limited to six patients (14%)⁷


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In combination with immunomodulatory drugs

**Selinexor + Revlimid® + dex (SRd)**
(n=20 ≥ 2nd Line)

- Overall Response Rate: 92% for Selinexor + Revlimid + dex, 67% for Benchmark Study: Revlimid + dex.

**Selinexor + Pomalyst® + dex (SPd)**
(n=46 / Median of 4 prior regimens)

- Overall Response Rate: 56% for Selinexor + Pomalyst + dex, 29% for Benchmark Study: Pomalyst + dex.
- PFS (Months): 12.2 for Selinexor + Pomalyst + dex, 3.6 for Benchmark Study: Pomalyst + dex.

**Safety:**
- AEs consistent with those reported from other selinexor studies
  - Most common Grade 1/2 AEs were constitutional events (e.g. nausea, fatigue, anorexia)
  - Most common Grade 3/4 AEs were cytopenias (e.g. thrombocytopenia, neutropenia, anemia)
- Exploring frontline setting: Initiated new all oral arm evaluating selinexor + Revlimid® + dex in newly diagnosed patients

Provides strong rationale for further clinical investigation of selinexor in combination with standard, approved therapies

Note: The STOMP study does not include any arms studying current myeloma backbone therapies without the combination of selinexor. The purpose of displaying the "Benchmark" data above for Revlimid and Pomalyst is to highlight that the clinical results from STOMP reported to date strongly support ongoing / additional clinical investigation of selinexor in combination regimens.

1 Selinexor and Backbone Treatments of Multiple Myeloma Patients. 2 White D, et al. IMW 2019. Abstract 353. 3 Chen C, et al. ASH 2019. Abstract 141. 4 Stewart et al. NEJM 2015. 5 Pomalyst Package Insert. 6 Revlimid® (lenalidomide), Pomalyst® (pomalidomide), Velcade® (bortezomib), Kyprolis® (carfilzomib) or Darzalex® (daratumumab).
STOMP\textsuperscript{1}: A Phase 1b/2 Study in Myeloma

In combination with an anti-CD38 mAb

<table>
<thead>
<tr>
<th>Selinexor + Darzalex\textsuperscript{®} + dex (SDd)\textsuperscript{2}</th>
<th>Overall Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=32 / Most Triple/Quad Refractory)</td>
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<td>75%</td>
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<td>100%</td>
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<tr>
<td>Selinexor + Darzalex + dex: Benchmark Study: Darzalex\textsuperscript{2} alone</td>
<td>73%</td>
</tr>
<tr>
<td>Selinexor + Darzalex + dex: Darzalex-naive</td>
<td>29%</td>
</tr>
</tbody>
</table>

Safety:

- AEs consistent with those reported from other selinexor studies
- Most common Grade 1/2 AEs were constitutional symptoms (e.g. nausea, fatigue, anorexia)
- Most common Grade 3/4 AEs were cytopenias (e.g. thrombocytopenia, neutropenia, anemia)

Provides strong rationale for further clinical investigation of selinexor in combination with standard, approved therapies\textsuperscript{4}

Note: The STOMP study does not include any arms studying current myeloma backbone therapies without the combination of selinexor. The purpose of displaying the “Benchmark” data above for Darzalex is to highlight that the clinical results from STOMP reported to date strongly support ongoing / additional clinical investigation of selinexor in combination regimens.

\textsuperscript{1} Selinexor and Backbone Treatments of Multiple Myeloma Patients. \textsuperscript{2} Gasparetto C, et al. ASCO 2020. Abstract 8510. \textsuperscript{3} Lonial et al., Lancet 2016. \textsuperscript{4} Revlimid\textsuperscript{®} (lenalidomide), Pomalyst\textsuperscript{®} (pomalidomide), Velcade\textsuperscript{®} (bortezomib), Kyprolis\textsuperscript{®} (carfilzomib) or Darzalex\textsuperscript{®} (daratumumab).