

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

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

Date of Report (Date of earliest event reported): July 26, 2024

APTOSE BIOSCIENCES INC.

(Exact name of registrant as specified in its charter)

Canada
(State or Other Jurisdiction of Incorporation)

001-32001
(Commission File Number)

98-1136802
(I.R.S. Employer Identification No.)

66 Wellington Street West, Suite 5300
TD Bank Tower, Box 48
Toronto, Ontario M5K 1E6
Canada
(Address of Principal Executive Offices) (Zip Code)

(647) 479-9828
(Registrant's telephone number, including area code)

251 Consumers Road, Suite 1105
Toronto, Ontario M2J 4R3
Canada
(Former name or former address, if changed since last report)

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

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares, no par value	APTO	NASDAQ Capital Market

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

Emerging growth company

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

Item 9.01. Financial Statements and Exhibits.

99.1 [Aptose Corporate Presentation - July 2024](#)
104 Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURE

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

Aptose Biosciences Inc.

Date: July 26, 2024

By: /s/ William G. Rice, Ph.D.
William G. Rice, Ph.D.
Chairman, President, and Chief Executive Officer

Aptose

Precision oncology
company developing
oral targeted agents
to treat hematologic
malignancies

Corporate Presentation
July 26, 2024

APT[®]OSE
BIOSCIENCES

Tuspetinib to Treat Newly Diagnosed AML

Aptose Disclosure

This presentation does not, and is not intended to, constitute or form part of, and should not be construed as, an offer or invitation for the sale or purchase of, or a solicitation of an offer to purchase, subscribe for or otherwise acquire, any securities, businesses and/or assets of any entity, nor shall it or any part of it be relied upon in connection with or act as any inducement to enter into any contract or commitment or investment decision whatsoever.

This presentation contains *forward-looking statements*, which reflect APTOSE Biosciences Inc.'s (the "Company") current expectations, estimates and projections regarding future events, including statements relating to our business strategy, our clinical development plans, our ability to obtain the substantial capital we require, our plans to secure strategic partnerships and to build our pipeline, our clinical trials and their projected timelines and milestones, the efficacy and toxicity of our product candidates, potential new intellectual property, our plans, objectives, expectations and intentions; and other statements including words such as "anticipate", "contemplate", "continue", "believe", "plan", "estimate", "expect", "intend", "will", "should", "may", and other similar expressions. Such statements constitute forward-looking statements within the meaning of securities laws.

Although the Company believes that the views reflected in these forward-looking statements are reasonable, such statements involve significant risks and uncertainties, and undue reliance should not be placed on such statements. Certain material factors or assumptions are applied in making these forward-looking statements, and actual results may differ materially from those statements. Those factors and risks include, but are not limited to, our ability to raise the funds necessary to continue our operations, changing market conditions, the successful and timely completion of our clinical studies including delays, the demonstration of safety and efficacy of our drug candidates, our ability to recruit patients, the establishment and maintenance of corporate alliances, the market potential of our product candidates, the impact of competitive products and pricing, new product development, changes in laws and regulations, uncertainties related to the regulatory approval process and other risks detailed from time to time in the Company's ongoing quarterly filings and annual reports.

Forward-looking statements contained in this document represent views only as of the date hereof and are presented for the purpose of assisting potential investors in understanding the Company's business and may not be appropriate for other purposes. The Company does not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by or on its behalf, except as required under applicable securities legislation. Investors should read the Company's continuous disclosure documents available at EDGAR at www.sec.gov/edgar.shtml and SEDAR+ at www.sedarplus.com, especially the risk factors detailed therein.

Aptose Management Team

William G. Rice, PhD
Chairman, President
& Chief Executive Officer



Fletcher Payne
Sr. VP, Chief Financial Officer
& Chief Business Officer



Rafael Bejar, MD, PhD
Sr. VP & Chief Medical Officer
KOL, Hematologic Malignancies



APTOSÉ
BIOSCIENCES

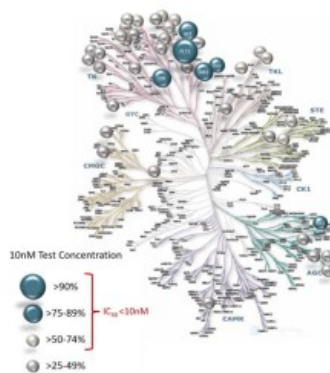
3

Tuspentinib Lead Clinical Asset

TUS+VEN+HMA triplet is being developed as frontline therapy to treat newly diagnosed AML

Frontline triplet clinical data expected 2H 2024

Potently targets SYK, FLT3, KIT^{MUT}, JAK1/2, RSK2 kinases



TUS : Tuspentinib ; **VEN** : Venetoclax ; **HMA** : Hypomethylating agent
AML : Acute Myeloid Leukemia ; **SOC** : Standard of Care

4

Unmet Need for Superior Frontline (1L) Therapy in AML

- Progress made with **VEN+HMA (SOC)** but unmet needs still exists
 - **Response rates** too low and **survival** too short in 1L therapy
 - **Resistance to VEN** compromises subsequent R/R therapies
- A **3rd agent** is needed to boost responses with VEN+HMA SOC
- Current 3rd agents inadequate – only address specific genetic subtypes and are limited by toxicities

Tuspentinib Ideal 3rd Agent for Addition to VEN and HMA

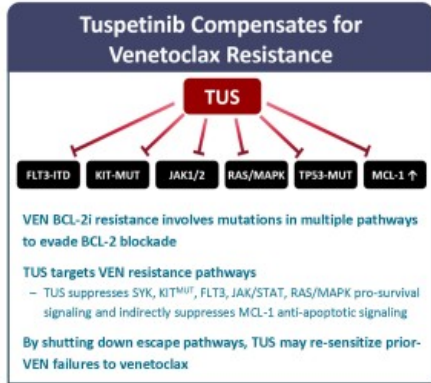
- **TUS** has excellent **safety** in combination with VEN and HMA
- **TUS** increases **efficacy** in combination with VEN and HMA
- **TUS** has **broad scope** of activity across AML genetic subgroups
- **TUS** may minimize **VEN resistance** by targeting VEN-resistance events

TUS+VEN+HMA

- Bring new **SOC** addressing needs of newly diagnosed AML patients
- **\$1Bn+** market potential in frontline AML

Tuspetinib Enhancing Venetoclax Efficacy in Frontline Therapy

TUS and VEN mechanistically cooperate to prevent drug resistance



ESH European Society for Hematology

Tuspetinib Oral Myeloid Kinase Inhibitor Creates Synthetic Lethal Vulnerability to Venetoclax

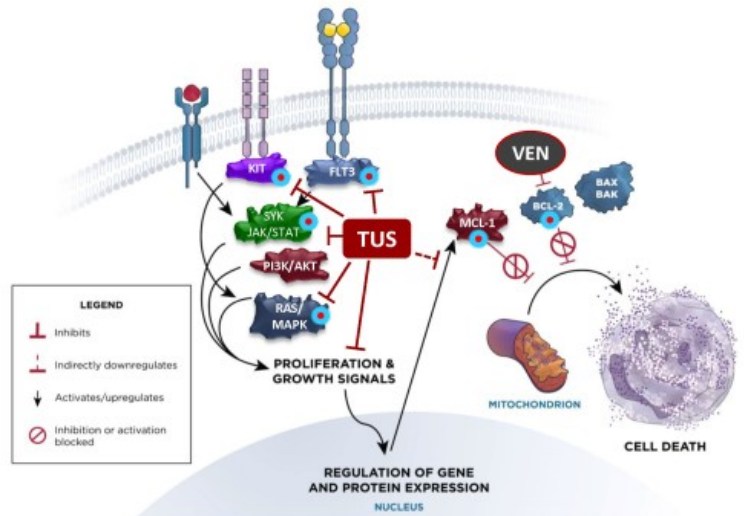
Strawhecker et al., Blood 2019; 133(10):2101-2110

ASH American Society of Hematology

Tuspetinib Oral Myeloid Kinase Inhibitor Safety and Efficacy As Monotherapy and Combined with Venetoclax in Phase 1/2 Trial of Patients with Relapsed or Refractory (R/R) Acute Myeloid Leukemia (AML)

Wang et al., Blood 2019; 133(10):2111-2120

RATIONALE FOR THE COMBINATION OF TUSPETINIB AND VENETOCLAX

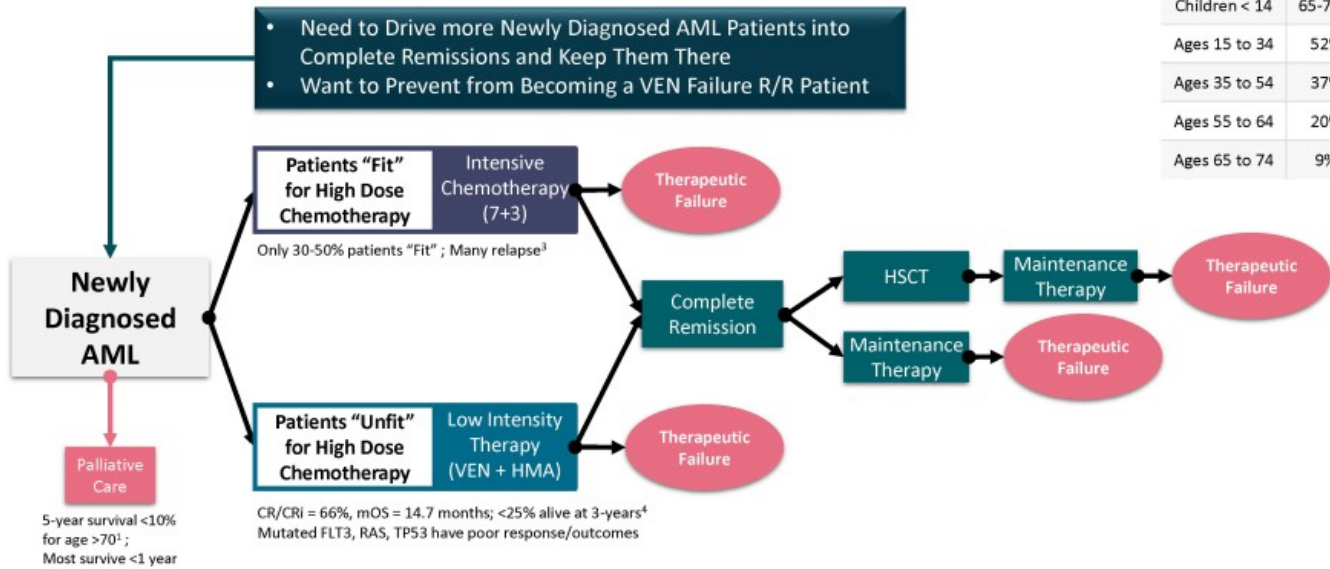


APTOSÉ
BIOSCIENCES

AML Patient Journey | 1L Therapy | Current Standard-of-Care (SOC) lead to therapeutic failure.....

Annual new cases in U.S. ≈ 21,000²
 Annual deaths in U.S. ≈ 11,200² | 5-yr survival ≈ 30% in adults²
 Roughly equivalent in Europe | Median age at diagnosis 68² | 5-yr survival 9% for age >65²

Age ²	5-year survival rate
Children < 14	65-70%
Ages 15 to 34	52%
Ages 35 to 54	37%
Ages 55 to 64	20%
Ages 65 to 74	9%



¹ J. Nat. Cancer Clin. Oncol. 2008; 28(16):2362-2368; ² Miller et al., Hematology 2012; ³ Maitland et al., Leukemia Research 2012; ⁴ Drenth et al., Leukemia Research 2012; ⁵ 2015; ⁶ 2015; ⁷ 2015; ⁸ 2015; ⁹ 2015; ¹⁰ 2015; ¹¹ 2015; ¹² 2015; ¹³ 2015; ¹⁴ 2015; ¹⁵ 2015; ¹⁶ 2015; ¹⁷ 2015; ¹⁸ 2015; ¹⁹ 2015; ²⁰ 2015; ²¹ 2015; ²² 2015; ²³ 2015; ²⁴ 2015; ²⁵ 2015; ²⁶ 2015; ²⁷ 2015; ²⁸ 2015; ²⁹ 2015; ³⁰ 2015; ³¹ 2015; ³² 2015; ³³ 2015; ³⁴ 2015; ³⁵ 2015; ³⁶ 2015; ³⁷ 2015; ³⁸ 2015; ³⁹ 2015; ⁴⁰ 2015; ⁴¹ 2015; ⁴² 2015; ⁴³ 2015; ⁴⁴ 2015; ⁴⁵ 2015; ⁴⁶ 2015; ⁴⁷ 2015; ⁴⁸ 2015; ⁴⁹ 2015; ⁵⁰ 2015; ⁵¹ 2015; ⁵² 2015; ⁵³ 2015; ⁵⁴ 2015; ⁵⁵ 2015; ⁵⁶ 2015; ⁵⁷ 2015; ⁵⁸ 2015; ⁵⁹ 2015; ⁶⁰ 2015; ⁶¹ 2015; ⁶² 2015; ⁶³ 2015; ⁶⁴ 2015; ⁶⁵ 2015; ⁶⁶ 2015; ⁶⁷ 2015; ⁶⁸ 2015; ⁶⁹ 2015; ⁷⁰ 2015; ⁷¹ 2015; ⁷² 2015; ⁷³ 2015; ⁷⁴ 2015; ⁷⁵ 2015; ⁷⁶ 2015; ⁷⁷ 2015; ⁷⁸ 2015; ⁷⁹ 2015; ⁸⁰ 2015; ⁸¹ 2015; ⁸² 2015; ⁸³ 2015; ⁸⁴ 2015; ⁸⁵ 2015; ⁸⁶ 2015; ⁸⁷ 2015; ⁸⁸ 2015; ⁸⁹ 2015; ⁹⁰ 2015; ⁹¹ 2015; ⁹² 2015; ⁹³ 2015; ⁹⁴ 2015; ⁹⁵ 2015; ⁹⁶ 2015; ⁹⁷ 2015; ⁹⁸ 2015; ⁹⁹ 2015; ¹⁰⁰ 2015; ¹⁰¹ 2015; ¹⁰² 2015; ¹⁰³ 2015; ¹⁰⁴ 2015; ¹⁰⁵ 2015; ¹⁰⁶ 2015; ¹⁰⁷ 2015; ¹⁰⁸ 2015; ¹⁰⁹ 2015; ¹¹⁰ 2015; ¹¹¹ 2015; ¹¹² 2015; ¹¹³ 2015; ¹¹⁴ 2015; ¹¹⁵ 2015; ¹¹⁶ 2015; ¹¹⁷ 2015; ¹¹⁸ 2015; ¹¹⁹ 2015; ¹²⁰ 2015; ¹²¹ 2015; ¹²² 2015; ¹²³ 2015; ¹²⁴ 2015; ¹²⁵ 2015; ¹²⁶ 2015; ¹²⁷ 2015; ¹²⁸ 2015; ¹²⁹ 2015; ¹³⁰ 2015; ¹³¹ 2015; ¹³² 2015; ¹³³ 2015; ¹³⁴ 2015; ¹³⁵ 2015; ¹³⁶ 2015; ¹³⁷ 2015; ¹³⁸ 2015; ¹³⁹ 2015; ¹⁴⁰ 2015; ¹⁴¹ 2015; ¹⁴² 2015; ¹⁴³ 2015; ¹⁴⁴ 2015; ¹⁴⁵ 2015; ¹⁴⁶ 2015; ¹⁴⁷ 2015; ¹⁴⁸ 2015; ¹⁴⁹ 2015; ¹⁵⁰ 2015; ¹⁵¹ 2015; ¹⁵² 2015; ¹⁵³ 2015; ¹⁵⁴ 2015; ¹⁵⁵ 2015; ¹⁵⁶ 2015; ¹⁵⁷ 2015; ¹⁵⁸ 2015; ¹⁵⁹ 2015; ¹⁶⁰ 2015; ¹⁶¹ 2015; ¹⁶² 2015; ¹⁶³ 2015; ¹⁶⁴ 2015; ¹⁶⁵ 2015; ¹⁶⁶ 2015; ¹⁶⁷ 2015; ¹⁶⁸ 2015; ¹⁶⁹ 2015; ¹⁷⁰ 2015; ¹⁷¹ 2015; ¹⁷² 2015; ¹⁷³ 2015; ¹⁷⁴ 2015; ¹⁷⁵ 2015; ¹⁷⁶ 2015; ¹⁷⁷ 2015; ¹⁷⁸ 2015; ¹⁷⁹ 2015; ¹⁸⁰ 2015; ¹⁸¹ 2015; ¹⁸² 2015; ¹⁸³ 2015; ¹⁸⁴ 2015; ¹⁸⁵ 2015; ¹⁸⁶ 2015; ¹⁸⁷ 2015; ¹⁸⁸ 2015; ¹⁸⁹ 2015; ¹⁹⁰ 2015; ¹⁹¹ 2015; ¹⁹² 2015; ¹⁹³ 2015; ¹⁹⁴ 2015; ¹⁹⁵ 2015; ¹⁹⁶ 2015; ¹⁹⁷ 2015; ¹⁹⁸ 2015; ¹⁹⁹ 2015; ²⁰⁰ 2015; ²⁰¹ 2015; ²⁰² 2015; ²⁰³ 2015; ²⁰⁴ 2015; ²⁰⁵ 2015; ²⁰⁶ 2015; ²⁰⁷ 2015; ²⁰⁸ 2015; ²⁰⁹ 2015; ²¹⁰ 2015; ²¹¹ 2015; ²¹² 2015; ²¹³ 2015; ²¹⁴ 2015; ²¹⁵ 2015; ²¹⁶ 2015; ²¹⁷ 2015; ²¹⁸ 2015; ²¹⁹ 2015; ²²⁰ 2015; ²²¹ 2015; ²²² 2015; ²²³ 2015; ²²⁴ 2015; ²²⁵ 2015; ²²⁶ 2015; ²²⁷ 2015; ²²⁸ 2015; ²²⁹ 2015; ²³⁰ 2015; ²³¹ 2015; ²³² 2015; ²³³ 2015; ²³⁴ 2015; ²³⁵ 2015; ²³⁶ 2015; ²³⁷ 2015; ²³⁸ 2015; ²³⁹ 2015; ²⁴⁰ 2015; ²⁴¹ 2015; ²⁴² 2015; ²⁴³ 2015; ²⁴⁴ 2015; ²⁴⁵ 2015; ²⁴⁶ 2015; ²⁴⁷ 2015; ²⁴⁸ 2015; ²⁴⁹ 2015; ²⁵⁰ 2015; ²⁵¹ 2015; ²⁵² 2015; ²⁵³ 2015; ²⁵⁴ 2015; ²⁵⁵ 2015; ²⁵⁶ 2015; ²⁵⁷ 2015; ²⁵⁸ 2015; ²⁵⁹ 2015; ²⁶⁰ 2015; ²⁶¹ 2015; ²⁶² 2015; ²⁶³ 2015; ²⁶⁴ 2015; ²⁶⁵ 2015; ²⁶⁶ 2015; ²⁶⁷ 2015; ²⁶⁸ 2015; ²⁶⁹ 2015; ²⁷⁰ 2015; ²⁷¹ 2015; ²⁷² 2015; ²⁷³ 2015; ²⁷⁴ 2015; ²⁷⁵ 2015; ²⁷⁶ 2015; ²⁷⁷ 2015; ²⁷⁸ 2015; ²⁷⁹ 2015; ²⁸⁰ 2015; ²⁸¹ 2015; ²⁸² 2015; ²⁸³ 2015; ²⁸⁴ 2015; ²⁸⁵ 2015; ²⁸⁶ 2015; ²⁸⁷ 2015; ²⁸⁸ 2015; ²⁸⁹ 2015; ²⁹⁰ 2015; ²⁹¹ 2015; ²⁹² 2015; ²⁹³ 2015; ²⁹⁴ 2015; ²⁹⁵ 2015; ²⁹⁶ 2015; ²⁹⁷ 2015; ²⁹⁸ 2015; ²⁹⁹ 2015; ³⁰⁰ 2015; ³⁰¹ 2015; ³⁰² 2015; ³⁰³ 2015; ³⁰⁴ 2015; ³⁰⁵ 2015; ³⁰⁶ 2015; ³⁰⁷ 2015; ³⁰⁸ 2015; ³⁰⁹ 2015; ³¹⁰ 2015; ³¹¹ 2015; ³¹² 2015; ³¹³ 2015; ³¹⁴ 2015; ³¹⁵ 2015; ³¹⁶ 2015; ³¹⁷ 2015; ³¹⁸ 2015; ³¹⁹ 2015; ³²⁰ 2015; ³²¹ 2015; ³²² 2015; ³²³ 2015; ³²⁴ 2015; ³²⁵ 2015; ³²⁶ 2015; ³²⁷ 2015; ³²⁸ 2015; ³²⁹ 2015; ³³⁰ 2015; ³³¹ 2015; ³³² 2015; ³³³ 2015; ³³⁴ 2015; ³³⁵ 2015; ³³⁶ 2015; ³³⁷ 2015; ³³⁸ 2015; ³³⁹ 2015; ³⁴⁰ 2015; ³⁴¹ 2015; ³⁴² 2015; ³⁴³ 2015; ³⁴⁴ 2015; ³⁴⁵ 2015; ³⁴⁶ 2015; ³⁴⁷ 2015; ³⁴⁸ 2015; ³⁴⁹ 2015; ³⁵⁰ 2015; ³⁵¹ 2015; ³⁵² 2015; ³⁵³ 2015; ³⁵⁴ 2015; ³⁵⁵ 2015; ³⁵⁶ 2015; ³⁵⁷ 2015; ³⁵⁸ 2015; ³⁵⁹ 2015; ³⁶⁰ 2015; ³⁶¹ 2015; ³⁶² 2015; ³⁶³ 2015; ³⁶⁴ 2015; ³⁶⁵ 2015; ³⁶⁶ 2015; ³⁶⁷ 2015; ³⁶⁸ 2015; ³⁶⁹ 2015; ³⁷⁰ 2015; ³⁷¹ 2015; ³⁷² 2015; ³⁷³ 2015; ³⁷⁴ 2015; ³⁷⁵ 2015; ³⁷⁶ 2015; ³⁷⁷ 2015; ³⁷⁸ 2015; ³⁷⁹ 2015; ³⁸⁰ 2015; ³⁸¹ 2015; ³⁸² 2015; ³⁸³ 2015; ³⁸⁴ 2015; ³⁸⁵ 2015; ³⁸⁶ 2015; ³⁸⁷ 2015; ³⁸⁸ 2015; ³⁸⁹ 2015; ³⁹⁰ 2015; ³⁹¹ 2015; ³⁹² 2015; ³⁹³ 2015; ³⁹⁴ 2015; ³⁹⁵ 2015; ³⁹⁶ 2015; ³⁹⁷ 2015; ³⁹⁸ 2015; ³⁹⁹ 2015; ⁴⁰⁰ 2015; ⁴⁰¹ 2015; ⁴⁰² 2015; ⁴⁰³ 2015; ⁴⁰⁴ 2015; ⁴⁰⁵ 2015; ⁴⁰⁶ 2015; ⁴⁰⁷ 2015; ⁴⁰⁸ 2015; ⁴⁰⁹ 2015; ⁴¹⁰ 2015; ⁴¹¹ 2015; ⁴¹² 2015; ⁴¹³ 2015; ⁴¹⁴ 2015; ⁴¹⁵ 2015; ⁴¹⁶ 2015; ⁴¹⁷ 2015; ⁴¹⁸ 2015; ⁴¹⁹ 2015; ⁴²⁰ 2015; ⁴²¹ 2015; ⁴²² 2015; ⁴²³ 2015; ⁴²⁴ 2015; ⁴²⁵ 2015; ⁴²⁶ 2015; ⁴²⁷ 2015; ⁴²⁸ 2015; ⁴²⁹ 2015; ⁴³⁰ 2015; ⁴³¹ 2015; ⁴³² 2015; ⁴³³ 2015; ⁴³⁴ 2015; ⁴³⁵ 2015; ⁴³⁶ 2015; ⁴³⁷ 2015; ⁴³⁸ 2015; ⁴³⁹ 2015; ⁴⁴⁰ 2015; ⁴⁴¹ 2015; ⁴⁴² 2015; ⁴⁴³ 2015; ⁴⁴⁴ 2015; ⁴⁴⁵ 2015; ⁴⁴⁶ 2015; ⁴⁴⁷ 2015; ⁴⁴⁸ 2015; ⁴⁴⁹ 2015; ⁴⁵⁰ 2015; ⁴⁵¹ 2015; ⁴⁵² 2015; ⁴⁵³ 2015; ⁴⁵⁴ 2015; ⁴⁵⁵ 2015; ⁴⁵⁶ 2015; ⁴⁵⁷ 2015; ⁴⁵⁸ 2015; ⁴⁵⁹ 2015; ⁴⁶⁰ 2015; ⁴⁶¹ 2015; ⁴⁶² 2015; ⁴⁶³ 2015; ⁴⁶⁴ 2015; ⁴⁶⁵ 2015; ⁴⁶⁶ 2015; ⁴⁶⁷ 2015; ⁴⁶⁸ 2015; ⁴⁶⁹ 2015; ⁴⁷⁰ 2015; ⁴⁷¹ 2015; ⁴⁷² 2015; ⁴⁷³ 2015; ⁴⁷⁴ 2015; ⁴⁷⁵ 2015; ⁴⁷⁶ 2015; ⁴⁷⁷ 2015; ⁴⁷⁸ 2015; ⁴⁷⁹ 2015; ⁴⁸⁰ 2015; ⁴⁸¹ 2015; ⁴⁸² 2015; ⁴⁸³ 2015; ⁴⁸⁴ 2015; ⁴⁸⁵ 2015; ⁴⁸⁶ 2015; ⁴⁸⁷ 2015; ⁴⁸⁸ 2015; ⁴⁸⁹ 2015; ⁴⁹⁰ 2015; ⁴⁹¹ 2015; ⁴⁹² 2015; ⁴⁹³ 2015; ⁴⁹⁴ 2015; ⁴⁹⁵ 2015; ⁴⁹⁶ 2015; ⁴⁹⁷ 2015; ⁴⁹⁸ 2015; ⁴⁹⁹ 2015; ⁵⁰⁰ 2015; ⁵⁰¹ 2015; ⁵⁰² 2015; ⁵⁰³ 2015; ⁵⁰⁴ 2015; ⁵⁰⁵ 2015; ⁵⁰⁶ 2015; ⁵⁰⁷ 2015; ⁵⁰⁸ 2015; ⁵⁰⁹ 2015; ⁵¹⁰ 2015; ⁵¹¹ 2015; ⁵¹² 2015; ⁵¹³ 2015; ⁵¹⁴ 2015; ⁵¹⁵ 2015; ⁵¹⁶ 2015; ⁵¹⁷ 2015; ⁵¹⁸ 2015; ⁵¹⁹ 2015; ⁵²⁰ 2015; ⁵²¹ 2015; ⁵²² 2015; ⁵²³ 2015; ⁵²⁴ 2015; ⁵²⁵ 2015; ⁵²⁶ 2015; ⁵²⁷ 2015; ⁵²⁸ 2015; ⁵²⁹ 2015; ⁵³⁰ 2015; ⁵³¹ 2015; ⁵³² 2015; ⁵³³ 2015; ⁵³⁴ 2015; ⁵³⁵ 2015; ⁵³⁶ 2015; ⁵³⁷ 2015; ⁵³⁸ 2015; ⁵³⁹ 2015; ⁵⁴⁰ 2015; ⁵⁴¹ 2015; ⁵⁴² 2015; ⁵⁴³ 2015; ⁵⁴⁴ 2015; ⁵⁴⁵ 2015; ⁵⁴⁶ 2015; ⁵⁴⁷ 2015; ⁵⁴⁸ 2015; ⁵⁴⁹ 2015; ⁵⁵⁰ 2015; ⁵⁵¹ 2015; ⁵⁵² 2015; ⁵⁵³ 2015; ⁵⁵⁴ 2015; ⁵⁵⁵ 2015; ⁵⁵⁶ 2015; ⁵⁵⁷ 2015; ⁵⁵⁸ 2015; ⁵⁵⁹ 2015; ⁵⁶⁰ 2015; ⁵⁶¹ 2015; ⁵⁶² 2015; ⁵⁶³ 2015; ⁵⁶⁴ 2015; ⁵⁶⁵ 2015; ⁵⁶⁶ 2015; ⁵⁶⁷ 2015; ⁵⁶⁸ 2015; ⁵⁶⁹ 2015; ⁵⁷⁰ 2015; ⁵⁷¹ 2015; ⁵⁷² 2015; ⁵⁷³ 2015; ⁵⁷⁴ 2015; ⁵⁷⁵ 2015; ⁵⁷⁶ 2015; ⁵⁷⁷ 2015; ⁵⁷⁸ 2015; ⁵⁷⁹ 2015; ⁵⁸⁰ 2015; ⁵⁸¹ 2015; ⁵⁸² 2015; ⁵⁸³ 2015; ⁵⁸⁴ 2015; ⁵⁸⁵ 2015; ⁵⁸⁶ 2015; ⁵⁸⁷ 2015; ⁵⁸⁸ 2015; ⁵⁸⁹ 2015; ⁵⁹⁰ 2015; ⁵⁹¹ 2015; ⁵⁹² 2015; ⁵⁹³ 2015; ⁵⁹⁴ 2015; ⁵⁹⁵ 2015; ⁵⁹⁶ 2015; ⁵⁹⁷ 2015; ⁵⁹⁸ 2015; ⁵⁹⁹ 2015; ⁶⁰⁰ 2015; ⁶⁰¹ 2015; ⁶⁰² 2015; ⁶⁰³ 2015; ⁶⁰⁴ 2015; ⁶⁰⁵ 2015; ⁶⁰⁶ 2015; ⁶⁰⁷ 2015; ⁶⁰⁸ 2015; ⁶⁰⁹ 2015; ⁶¹⁰ 2015; ⁶¹¹ 2015; ⁶¹² 2015; ⁶¹³ 2015; ⁶¹⁴ 2015; ⁶¹⁵ 2015; ⁶¹⁶ 2015; ⁶¹⁷ 2015; ⁶¹⁸ 2015; ⁶¹⁹ 2015; ⁶²⁰ 2015; ⁶²¹ 2015; ⁶²² 2015; ⁶²³ 2015; ⁶²⁴ 2015; ⁶²⁵ 2015; ⁶²⁶ 2015; ⁶²⁷ 2015; ⁶²⁸ 2015; ⁶²⁹ 2015; ⁶³⁰ 2015; ⁶³¹ 2015; ⁶³² 2015; ⁶³³ 2015; ⁶³⁴ 2015; ⁶³⁵ 2015; ⁶³⁶ 2015; ⁶³⁷ 2015; ⁶³⁸ 2015; ⁶³⁹ 2015; ⁶⁴⁰ 2015; ⁶⁴¹ 2015; ⁶⁴² 2015; ⁶⁴³ 2015; ⁶⁴⁴ 2015; ⁶⁴⁵ 2015; ⁶⁴⁶ 2015; ⁶⁴⁷ 2015; ⁶⁴⁸ 2015; ⁶⁴⁹ 2015; ⁶⁵⁰ 2015; ⁶⁵¹ 2015; ⁶⁵² 2015; ⁶⁵³ 2015; ⁶⁵⁴ 2015; ⁶⁵⁵ 2015; ⁶⁵⁶ 2015; ⁶⁵⁷ 2015; ⁶⁵⁸ 2015; ⁶⁵⁹ 2015; ⁶⁶⁰ 2015; ⁶⁶¹ 2015; ⁶⁶² 2015; ⁶⁶³ 2015; ⁶⁶⁴ 2015; ⁶⁶⁵ 2015; ⁶⁶⁶ 2015; ⁶⁶⁷ 2015; ⁶⁶⁸ 2015; ⁶⁶⁹ 2015; ⁶⁷⁰ 2015; ⁶⁷¹ 2015; ⁶⁷² 2015; ⁶⁷³ 2015; ⁶⁷⁴ 2015; ⁶⁷⁵ 2015; ⁶⁷⁶ 2015; ⁶⁷⁷ 2015; ⁶⁷⁸ 2015; ⁶⁷⁹ 2015; ⁶⁸⁰ 2015; ⁶⁸¹ 2015; ⁶⁸² 2015; ⁶⁸³ 2015; ⁶⁸⁴ 2015; ⁶⁸⁵ 2015; ⁶⁸⁶ 2015; ⁶⁸⁷ 2015; ⁶⁸⁸ 2015; ⁶⁸⁹ 2015; ⁶⁹⁰ 2015; ⁶⁹¹ 2015; ⁶⁹² 2015; ⁶⁹³ 2015; ⁶⁹⁴ 2015; ⁶⁹⁵ 2015; ⁶⁹⁶ 2015; ⁶⁹⁷ 2015; ⁶⁹⁸ 2015; ⁶⁹⁹ 2015; ⁷⁰⁰ 2015; ⁷⁰¹ 2015; ⁷⁰² 2015; ⁷⁰³ 2015; <

New Paradigm in Frontline Therapy to Treat Newly Diagnosed AML

Deploying Triplet Combinations of Targeted Drugs | Building on VEN + HMA Backbone for 1L Therapy

Proof for Triplets : Addition of a 3rd Targeted Agent Boosts VEN+HMA Responses in 1L AML
Addition of gilteritinib (Gilt) FLT3i to VEN+HMA boosts CR rate to 90% in newly diagnosed FLT3+ AML patients¹
So, What's the Problem: Current 3rd Agents for Triplets have Limitations
Gilt is **not active in FLT3-Wildtype** AML (70% of patients) and **toxicities** of Gilt with VEN+HMA require SOC **dose reductions**

Solution: TUS Fulfills Ideal Profile as 3rd Agent for 1L Triplet

TUS clean safety is ideal for addition to VEN+HMA backbone

- TUS shows no QTc prolongation, muscle damage, differentiation syndrome, or prolonged myelosuppression in remission
- TUS is not expected to require dose reductions or interruptions to SOC drugs

TUS clinical efficacy broader than Gilt and achieves CR in high-risk AML

- TUS achieves clinical responses in patients who failed prior therapy with Gilt
- TUS achieves clinical responses at lower and better-tolerated doses than Gilt
- TUS achieves clinical responses in FLT3^{WT} patients (70% of AML population), a population not addressable by Gilt FLT3i

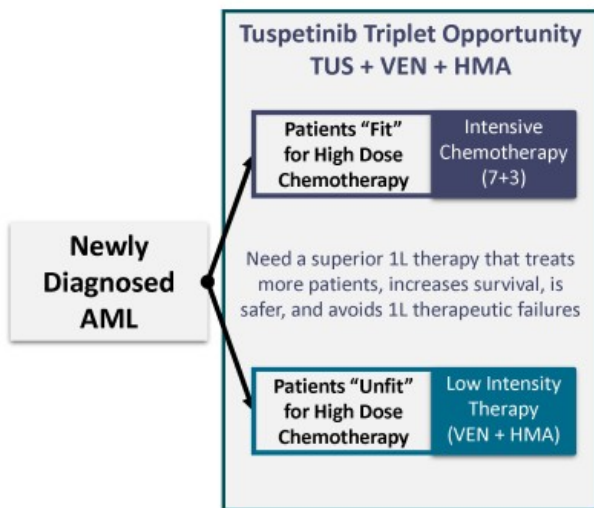
TUS preclinical safety, antitumor, mechanistic findings superior to Gilt

- TUS MOA targets VEN-resistance mechanisms and re-sensitizes cells to VEN
- TUS suppresses more oncogenic signaling pathways than Gilt and at lower doses
- TUS potent antitumor activity in animal models of human AML resistant to Gilt
- TUS+VEN & TUS+HMA safe and effective in animal models of human AML

¹ Short et al. J Clin Oncol. 2024 Jan 26;JCO2301911. Epub ahead of print. PMID: 38277619.

AML Patient Journey | 1L Therapy High-Level Overview

Tuspetinib-containing triplet can become a new 1L SOC to increase survival



Tuspetinib Frontline Triplet Opportunities

- TUS has broad activity across AML genetic subgroups: Including those with TP53, RAS/MAPK, FLT3 mutations
- TUS is the only agent being developed in combination with VEN+HMA for high-risk AML subtypes with highly adverse TP53 and RAS mutations
- Potential to increase CR rates and survival of FLT3^{MUT} patients without the need to dose reduce SOC drugs
- TUS is the only agent being developed in combination with VEN+HMA for FLT3^{WT} AML patients (70% of AML)
- TUS+VEN+HMA expected to be a safer and broader therapy for "unfit" patients than any other triplet
- TUS expected to minimize VEN resistance

FDA Requirements for TUS to Enter Frontline Therapy in Newly Diagnosed AML

Tuspetinib has Met the FDA Requirements to Perform the Triplet Pilot Study

What Does the FDA Want?
Begin in R/R AML with TUS and TUS+VEN

Aptose Completed

TUS Single Agent Study in R/R AML

Thorough Single Agent Dose Exploration	✓
Demonstrate Single Agent Responses	✓
Demonstrate Single Agent Safety	✓
Orphan Drug Designation and Fast Track Status	✓

Tus+Ven Doublet Study in R/R AML

Characterize Safety of TUS+VEN Doublet	✓
Characterize PK of TUS and VEN in Doublet	✓

Next Step: TUS+VEN+AZA Triplet Study

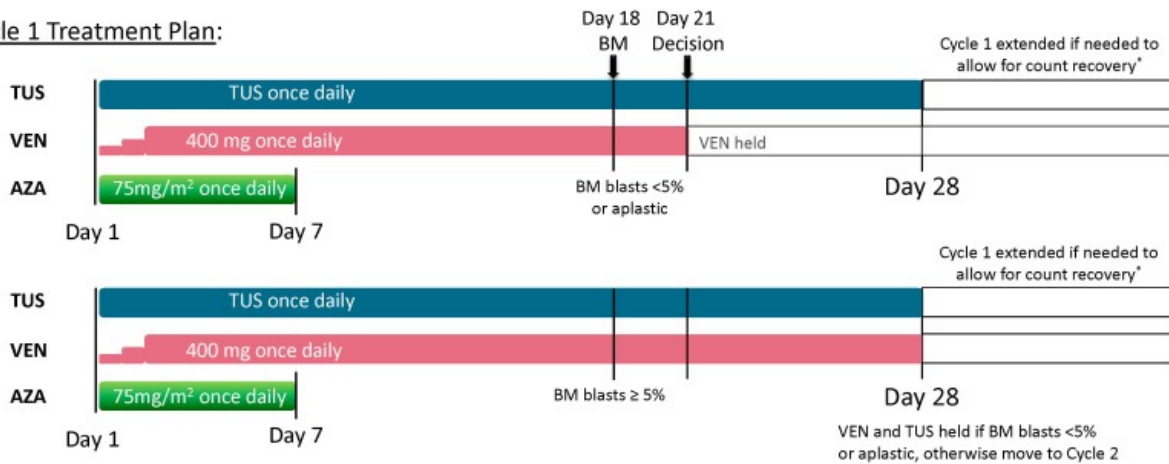
Initiate dosing and collect data from Triplet Pilot Study in Newly Diagnosed AML Patients

- ✓ FDA allowed triplet initiation with 40mg TUS (typical one dose level below single agent RP2D) and then escalate
- ✓ Protocol implemented and clinical sites being prepared
 - Select optimal dose of TUS that allows for SOC dosing
 - Characterize safety and mitigate myelosuppression
 - Characterize activity in TP53^{MUT} and N/KRAS^{MUT}
 - Characterize activity in FLT3^{MUT} and FLT3^{UNMUT}
 - Characterize PK of TUS and VEN in triplet
 - Determine CR, CRh, CRc, MRD rates
 - Characterize duration of dosing
 - Characterize mOS

TUS+VEN+AZA TRIPLET Ph 1/2 Study: Design, Patient Populations, Dose Selection, Goals

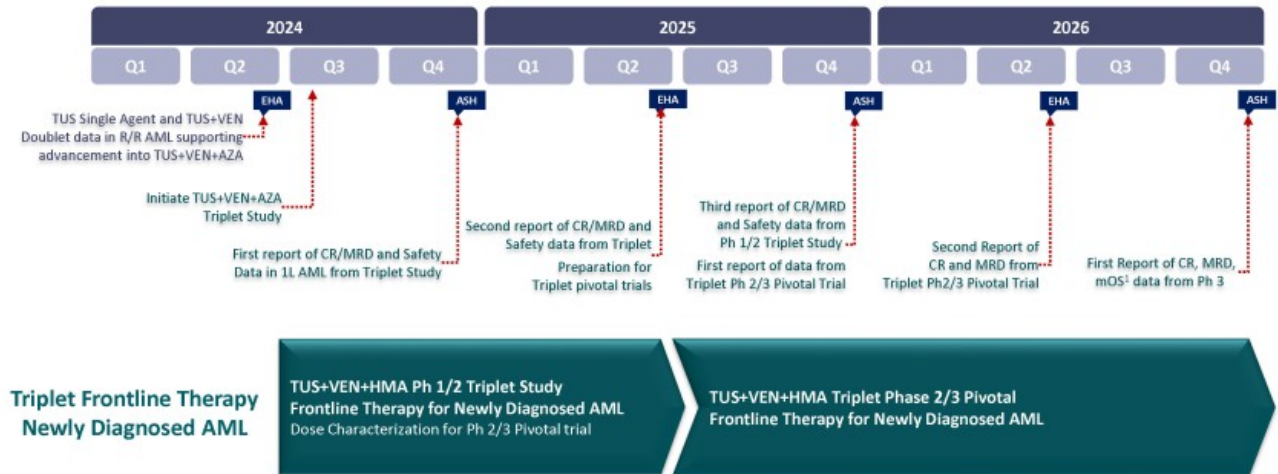
Patient Populations | Approx. 18-26 Pts Total | 50% FLT3-MUT | <20% TP53+/CK
Trial Goals | Safety, CR rate, MRD negativity and OS across AML subtypes (FLT3^{MUT/WT}, TP53^{MUT}, RAS^{MUT})
Dose Characterization | Demonstrate TUS is Highly Active and May Avoid SOC Dose Reductions

Cycle 1 Treatment Plan:



* GICSP permitted after D28 per protocol

TUS+VEN+HMA Planned Clinical Development Plan, Timelines and Milestones



Tuspetinib (TUS) Single Agent and TUS+VEN Doublet Clinical Findings Support TUS+VEN+HMA Triplet

TUS Single Agent and TUS+VEN Doublet Study Designs in R/R AML Patients

Positions TUS for Combination 1L Therapy to Treat Newly Diagnosed AML

TUS Single Agent Dose Escalation and Exploration¹

Total
n=91

Cohort 1: 20 mg QD 2

Cohort 2: 40 mg QD 17

Cohort 3: 80 mg QD 20

Cohort 4: 120 mg QD 32

Cohort 5: 160 mg QD 16

Cohort 6: 200 mg QD 4

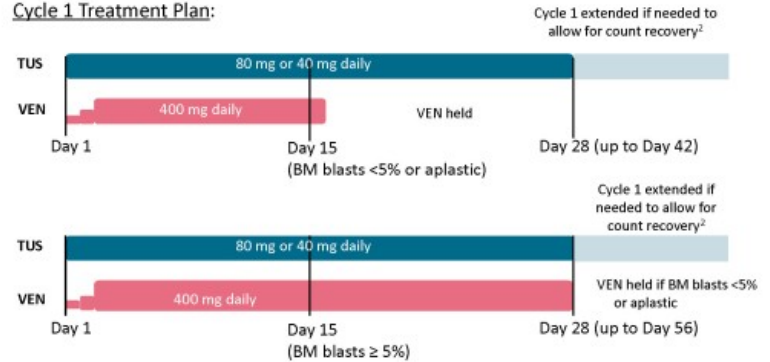
Doses with CR & no DLT

TUS+VEN Doublet Study¹

Extensive dose exploration (TUS 80mg or 40mg + VEN 400mg)

n=77 dosed | n=65 in 80 mg/400 mg | n=12 in 40 mg/400 mg

Cycle 1 Treatment Plan:



APTOSÉ
BIOSCIENCES

13

¹ Data cut Feb 09, 2024

² GCSF permitted anytime per protocol

TUS and TUS+VEN : Patient Characteristics of Highly Treatment Experienced R/R AML Patients

TUS Single Agent Study Baseline Patient Characteristics¹

- 91 patients dosed as of Feb 09, 2024
- Median age > 60 years: Older population
- Over 36% failed Prior-transplant
- 50% of FLT3^{MUT} failed Prior-FLT3i
- Population included FLT3^{WT} and FLT3^{MUT}
- Population included 16% TP53^{MUT}/CK and 15% NKRAS^{MUT}
- Over 56% failed Prior-VEN : Correlates with poor outcome

Patient Characteristics (n=91)	FLT3 ^{MUT}	FLT3 ^{WT}
Patient number n (%) ²	34	56
Median Age Years (Range)	60 (21-84)	65.5 (18-83)
Female n (%)	14 (41.2%)	24 (42.9%)
Lines prior therapy Mean (Range)	3.3 (1-11)	2.4 (1-6)
Prior-VEN	19 (55.9%)	33 (58.9%)
Prior FLT3 Inhibitor	17 (50.0%)	3 (5.4%)
Prior Cytotoxic chemotherapy	26 (76.5%)	36 (64.3%)
Prior HMAs	22 (64.7%)	37 (66.1%)
Prior HSCT	14 (41.2%)	19 (33.9%)

TUS+VEN Doublet Study Baseline Patient Characteristics¹

- 77 patients dosed as of Feb 09, 2024
- Median age > 68 years: Older than TUS single agent trial
- Over 25% failed Prior-transplant
- Over 77% of FLT3^{MUT} failed Prior-FLT3i
- Population included FLT3^{WT} and FLT3^{MUT}
- Population included 30% TP53^{MUT}/CK and 15% NKRAS^{MUT}
- Over 74% failed Prior-VEN : Correlates with poor outcome

Patient Characteristics (n=77)	FLT3 ^{MUT}	FLT3 ^{WT}
Patient number n (%) ³	18	57
Median Age Years (Range)	68.5 (39-84)	69 (31-86)
Female n (%)	10 (55.6%)	28 (49.1%)
Prior lines of therapy Mean (Range)	2.9 (1-5)	2.2 (1-7)
Prior-VEN	14 (77.8%)	41 (71.9%)
Prior FLT3 Inhibitor	14 (77.8%)	7 (12.3%)
Prior Cytotoxic chemotherapy	10 (55.6%)	29 (50.9%)
Prior HMAs	13 (72.2%)	44 (77.2%)
Prior HSCT	7 (38.9%)	13 (22.8%)

¹ Data cut Feb 09, 2024

² Number of patients in the Single Agent Study as of Feb 09, 2024 . One patient had an indeterminant status for FLT3.

³ Four patients had an indeterminant status for FLT3 as of Feb 09, 2024 in the TUS+VEN Doublet Study.

APTOSÉ
BIOSCIENCES

14

TUS and TUS+VEN Safe and Well Tolerated in Highly Treatment Experienced R/R AML

TUS Single Agent Study Excellent Safety and Tolerability

- No drug-related myelosuppression in remission
- No treatment related QTc prolongation or CPK elevations
- No drug-related discontinuations or deaths
- No drug-related non-hematologic SAEs
- No differentiation syndrome

TUS+VEN Doublet Study Excellent Safety and Tolerability

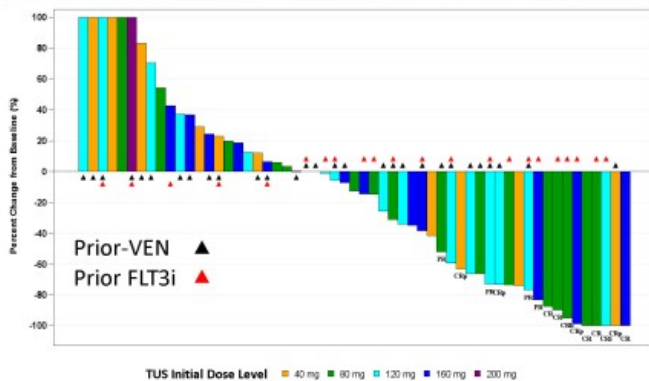
- No new or unexpected safety signals with TUS+VEN
- No drug related AE of QTc prolongation
- No differentiation syndrome observed
- No drug related deaths

Adverse Events	TUS Single Agent		TUS+VEN Doublet Related to TUS/VEN, n(%) (n=79)		
	Treatment Emergent AEs	Treatment Related AEs	Treatment Emergent AEs	Treatment Emergent AEs Related to TUS	Treatment Emergent AEs Related to VEN
Any	89 (55.7%)	29 (18.2%)	77 (97.5%)	41 (51.9%)	36 (46.3%)
Most Frequent AEs ≥10%					
Pneumonia	31 (33.3%)	0 (0%)	16 (20.3%)	2 (2.5%)	3 (3.8%)
Nausea	20 (21.5%)	9 (9.7%)	21 (26.6%)	14 (17.7%)	10 (12.7%)
Diarrhea	18 (19.4%)	9 (9.7%)	14 (17.7%)	5 (6.3%)	4 (5.1%)
Pyrexia	18 (19.4%)	0 (0%)	11 (13.9%)	1 (1.3%)	1 (1.3%)
Alanine aminotransferase increased	13 (14.0%)	2 (2.2%)	12 (15.2%)	3 (3.8%)	3 (3.8%)
Hypokalaemia	13 (14.0%)	0 (0%)	10 (12.7%)	2 (2.5%)	1 (1.3%)
Epistaxis	12 (12.9%)	0 (0%)	4 (5.1%)	0 (0%)	0 (0%)
Decreased appetite	11 (11.8%)	2 (2.2%)	11 (13.9%)	4 (5.1%)	4 (5.1%)
Hypomagnesaemia	11 (11.8%)	0 (0%)	4 (5.1%)	1 (1.3%)	1 (1.3%)
Febrile neutropenia	11 (11.8%)	1 (1.1%)	10 (12.7%)	3 (3.8%)	4 (5.1%)
Fatigue	10 (10.8%)	2 (2.2%)	15 (19.0%)	6 (7.6%)	5 (6.3%)
Abdominal pain	10 (10.8%)	0 (0%)	4 (5.1%)	1 (1.3%)	1 (1.3%)
Constipation	10 (10.8%)	2 (2.2%)	6 (7.6%)	0 (0%)	0 (0%)
Dyspnoea	10 (10.8%)	0 (0%)	9 (11.4%)	0 (0%)	0 (0%)
Headache	10 (10.8%)	1 (1.1%)	6 (7.6%)	0 (0%)	0 (0%)
Cough	8 (8.6%)	0 (0%)	10 (12.7%)	0 (0%)	0 (0%)
Anaemia	6 (6.5%)	0 (0%)	11 (13.9%)	4 (5.1%)	4 (5.1%)
Neutrophil count decreased	5 (5.4%)	2 (2.2%)	8 (10.1%)	6 (7.6%)	5 (6.3%)
Platelet count decreased	5 (5.4%)	1 (1.1%)	10 (12.7%)	4 (5.1%)	3 (3.8%)
White blood cell count decreased	4 (4.3%)	2 (2.2%)	10 (12.7%)	6 (7.6%)	7 (8.9%)
Aspartate aminotransferase increased	4 (4.3%)	1 (1.1%)	11 (13.9%)	2 (2.5%)	2 (2.5%)
Grade 2-3 AEs (≥10%)	66 (71.0%)	9 (9.7%)	67 (84.8%)	23 (29.1%)	23 (29.1%)
Pneumonia	26 (28.0%)	0 (0%)	14 (17.7%)	2 (2.5%)	3 (3.8%)
Febrile neutropenia	10 (10.8%)	1 (1.1%)	19 (24.1%)	2 (2.5%)	3 (3.8%)
Anaemia	5 (5.4%)	0 (0%)	11 (13.9%)	3 (3.8%)	3 (3.8%)
Platelet count decreased	4 (4.3%)	0 (0%)	11 (13.9%)	4 (5.1%)	3 (3.8%)
SAEs					
Leading to treatment termination	12 (12.9%)	1 (1.1%)	11 (13.9%)	1 (1.3%)	3 (3.8%)
Leading to death	18 (19.4%)	0 (0%)	17 (21.5%)	0 (0%)	0 (0%)

TUS and TUS+VEN : Bone Marrow Blast Reductions and Responses in R/R AML Patients

TUS Single Agent Treatment

Bone Marrow Leukemic Blasts | Percent Change from Baseline
Blast Reductions Demonstrate Activity Across 4 Dose Levels
Activity in Patients Who Failed Prior-VEN and Prior-FLT3i



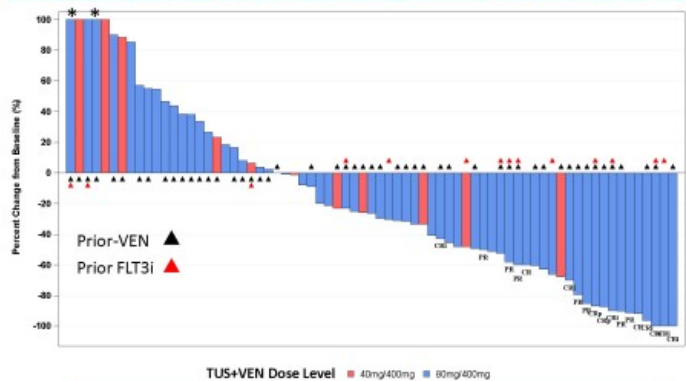
Note: Blast percent change was calculated as 100 X (the lowest post-baseline bone marrow blast - baseline bone marrow blast)/baseline bone marrow blast. Patients with blast percent change >=100% are shown as 100%. Only patients who reported both baseline and any post-baseline bone marrow blast results are included in the figure.

▲ Black triangle indicates patients who received prior-VEN before starting Tuspetinib.
▲ Red triangle indicates prior FLT3i.

* Black asterisk indicates patients who administered hydroxyurea within 7 days prior to the lowest marrow blast value
Data cut Feb 05, 2024

TUS+VEN Doublet Treatment

Bone Marrow Leukemic Blasts | Percent Change from Baseline
Blast Reductions in VEN-Naïve and Prior-VEN R/R AML
Blast Reduction in R/R AML Who Failed Prior-VEN and Prior-FL3i



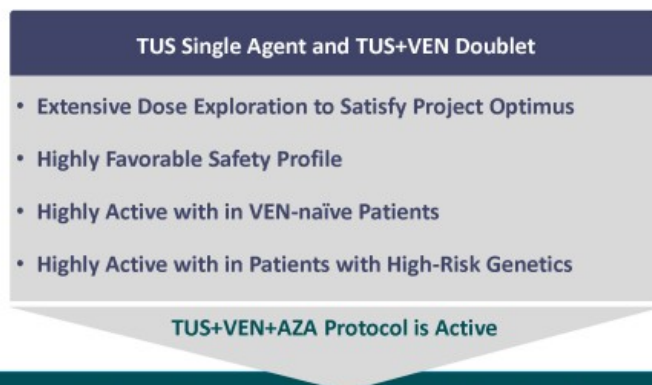
40mgTUS+400mgVEN

- 11 Patients evaluable
 - 73% failed prior-VEN
- 55% (n=6/11) achieved blast reductions
 - 67% (4/6) failed prior-VEN

80mgTus+400mgVEN

- 60 Patients evaluable
 - 72% failed prior-VEN
- 67% (n=40/60) achieved blast reductions
 - 65% (26/40) failed prior-VEN

TUS Single Agent and TUS+VEN Doublet Support Development for 1L Triplet Therapy



TUS + VEN + HMA Phase 1/2 Triplet Study

Tuspetinib advancing into a triple drug combination (triplet) of target agents

Newly diagnosed AML patients are VEN-naïve, FLT3i-naïve, HMA-naïve and highly responsive to triplets

TUS+VEN+HMA may become a new Standard-of-Care for frontline (1L) therapy of Newly Diagnosed AML Patients

17

APTOSÉ
BIOSCIENCES

Key Opinion Leaders (KOLs) highly enthusiastic for TUS+VEN+HMA triplet

- Investigators' enthusiasm enrolled the TUS+VEN doublet trial ahead of schedule
- KOLs now ramping up TUS+VEN HMA triplet trial in newly diagnosed AML

Dr. Naval Daver, MD Anderson Cancer Center

AML Drug Combination KOL and Global Lead Investigator for Tuspetinib Clinical Trials

- "Tuspetinib is clearly an **active and surprisingly well-tolerated agent in one of the most challenging and heterogeneous disease settings in oncology**— relapsed and refractory AML."

Aptose Press Release for ASH 2023 Dec. 09, 2023

- "Tuspetinib has demonstrated **broad activity**, including activity in patients with FLT3 wild-type AML (accounting for more than 70% of the AML population), FLT3 mutated AML, NPM1 mutated AML, as well as in patients with mutations historically associated with resistance to targeted therapy. Most notably, **TUS targets VEN resistance mechanisms**, enabling TUS+VEN uniquely to **treat the very ill prior-VEN AML population**, including both **FLT3 mutant and FLT3 wildtype** disease."
- "From a broader perspective, the growing body of antileukemic activity, and continued favorable safety profile, **support advancement of tuspetinib in a TUS+VEN+HMA triplet for the treatment of frontline newly diagnosed AML patients.**"

18

APTOSÉ
BIOSCIENCES

Investment Thesis

- Highest unmet medical needs in frontline AML
 - Need to safely increase survival across all subgroups
- TUS emerging as ideal agent to combine with VEN+HMA
 - Excellent safety profile
 - Broad activity on FLT3^{MUT} and FLT3^{WT} AML (70% of cases)
 - High-risk TP53 and RAS mutated AML sensitive
 - May minimize resistance to VEN (Venetoclax)
 - KOLs support TUS as the ideal 3rd agent for 1L triplet
 - Extended patent life and premium pricing
- Near-term milestones can create shareholder value

APT^QSE
BIOSCIENCES

Near-Term Milestones

2024: EHA

- Report TUS Single Agent and TUS+VEN Doublet data in R/R AML supporting TUS+VEN+AZA Triplet trial in newly diagnosed AML

2024: Summer (Q3)

- Initiate dosing of TUS+VEN+AZA Triplet in newly diagnosed AML

2024: ASH

- Report of CR/MRD/Safety data from TUS+VEN+AZA Triplet pilot

2025: 1H

- Complete enrollment in TUS+VEN+AZA Triplet pilot and report CR/MRD/Safety data

2025: EHA

- Data readout TUS+VEN+AZA Triplet pilot
- Select TUS dose for TUS+VEN+HMA Triplet PIVOTAL trials

2025: ASH

- Initiate Ph 2 portion of Ph 2 / Ph 3 PIVOTAL program

Thank you

APT^QSE
BIOSCIENCES