

Web-Conference AB8939 Clinical Development Update

October 2025



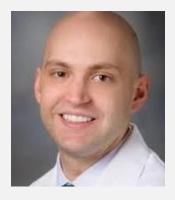
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Participants



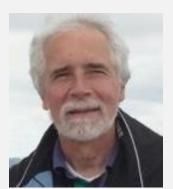
AML EXPERTS



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AB SCIENCE MANAGEMENT



ALAIN MOUSSYCo-founder and CEO



LAURENT GUYChief Financial Officer

Today's objective it to update the market on the second platform AB8939



Proprietary Drug Portfolio

Platform	Drug / Target	Therapeutic area	Indication	Development Stage
Tyrosine Kinase Inhibitor	Masitinib (Veterinary)	Oncology	Canine Mast Cell Tumor	Registered in the EU (>1M€ annual sales)
		Neuro-	Amyotrophic Lateral Sclerosis	Phase 3 Authorized
	Masitinib	degenerative Diseases	Progressive Forms of Multiple Sclerosis	Phase 3 Sites initiated
Tyrosine Kinase		(NDD)	Alzheimer's Disease	Phase 3 Authorized
Inhibitor	(Oral)	Mast Cell	Indolent Systemic Mastocytosis	Phase 3 Initiated
		Diseases	Mast Cell Activation Syndrome	Phase 2 Initiated
		Blood diseases	Sickle Cell Disease	Phase 2 To be authorized
ALDH /	AB8939 (IV)	Hematology	Acute Myeloid Leukemia (AML)	Phase 1 Initiated
Microtubule	AB12319 (Oral)	Oncology	Sarcoma, Solid Tumors	Preclinical

⁽¹⁾ Collaborative programme with Assistance Publique - Hôpitaux de Paris (AP-HP) as sponsor, publicly funded as part of the "hospital-university health research" projects under the Future Investment Programme.

Development of AB8939, a new drug targeting

Tumor cells (Tubulin disruption)

And

Tumor stem cells (ALDH inhibition)



Non Clinical Data

Clinical Data - Monotherapy

Clinical Data – Combination Therapy

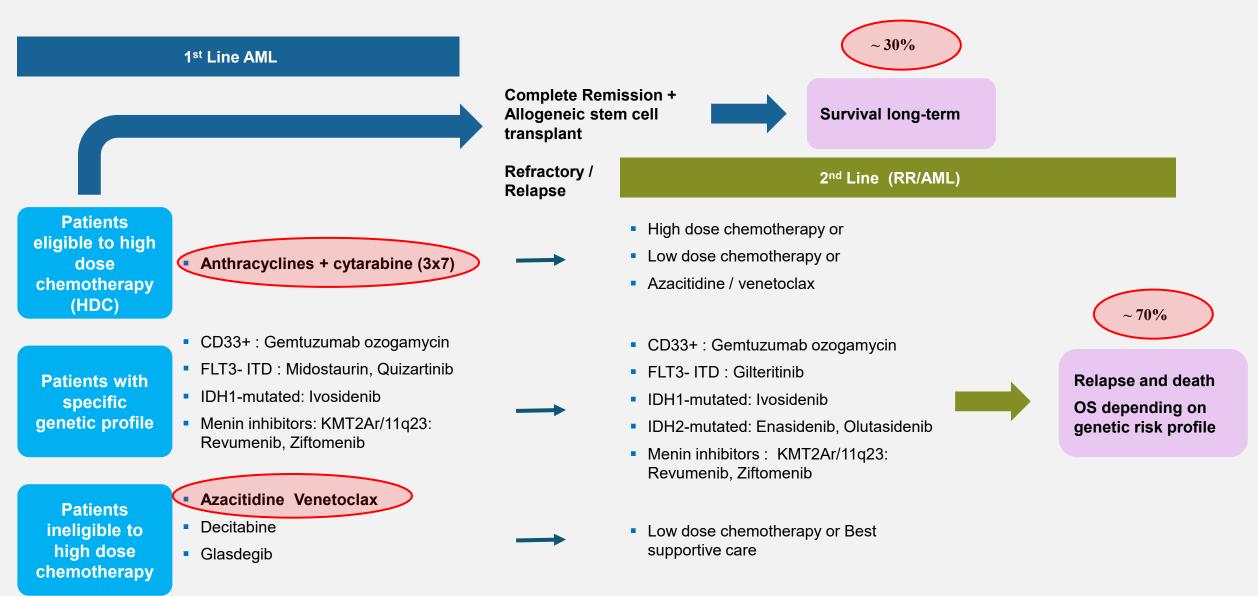
Next Steps

Concluding Statements from AML Experts

In AML, there are several registered drugs but 70% of patients relapse and die creating a persistant unmet medical need. AML remains the most lethal leukemia in humans



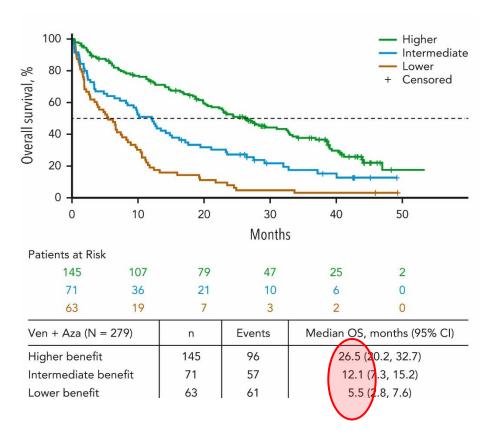
AML treatment



AML is a heterogenous disease with outcome highly dependent on genetic factors. TP53 mutation has a very poor prognosis, NRAS, KRAS mutant has a poor prognosis



Outcomes with Venetoclax + Azacitidine by Genetic Risk in treatment-naive AML patients



3 prognostic risk signatures, defined by the mutational status of just 4 genes

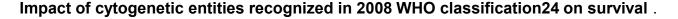
HIGH RISK TP53 MUTATION

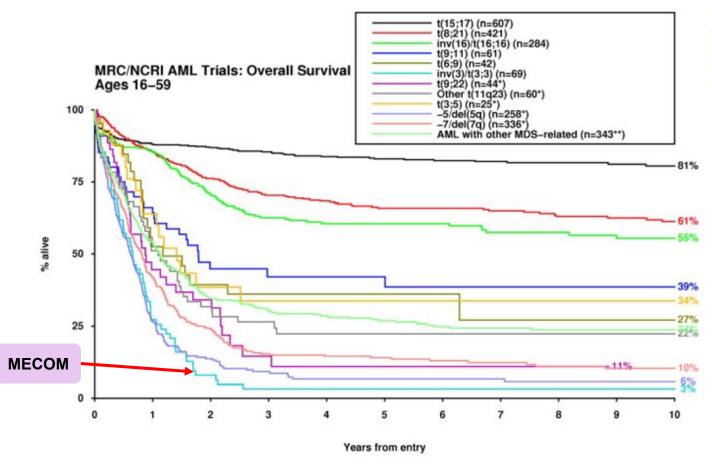
INTERMEDIATE RISK KRAS, NRAS, FLT3 ITD

LOW RISK others

MECOM has the worst prognosis in AML, with a median OS of 5.5 months ⁽¹⁾ in relapsed or refractory setting



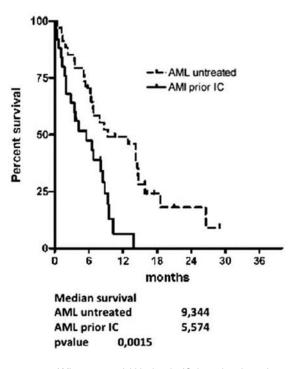




^{*}Excluding patients with t(15;17), t(8;21), inv(16), t(9;11), t(6;9),inv(3)/t(3;3).

Grimwade et al. Blood. 2010 Jul 22;116(3):354-65. doi: 10.1182/blood-2009-11-254441.

Survival of AML with 3q abnormality treated with AZA according to prior treatments. Survival was expressed in months and calculated using Kaplan Meier estimate.



AML: acute myeloid leukemia; IC: intensive chemotherapy.

Wanquet et al. Am. J. Hematol. 90:859-863, 2015.

^{**}Excluding patients with any other abnormalities listed previously.

AB8939 targets proliferating leukemia blasts and leukemia stem cells



Problem in AML is recurrence of tumor

This problem may be solved by the dual Moa of AB8939

CANCER CELLS ARE RESISTANT TO CHEMOTHERAPY



BLOCKING
PROLIFERATING
LEUKEMIA CELLS
THROUGH
MICROTUBULES
DISRUPTION



- Destabilizes microtubules a well kown MoA in cancer but that suffers for known drugs (taxol, taxoter, vincristine, vinblastine) from multi drug resistance and rapid metabolization
- AB8939 is not subjected to multidrug resistance (no PgP binding)
- AB8939 is not degraded by myeloperoxidase

RELAPSING DUE TO PERSISTENCE OF CANCER STEM CELLS



TARGETING OF LEUKEMIA CANCER STEM CELLS THOUGH ALDHS INHIBITION



- ALDH plays critical role in cancer stem cells
- AML cells with high ALDH activity are more resistant to chemotherapeutic agents
- ALDH is over-expressed in MECOM

THIS DUAL
EFFECT RESULTS
IN THE DECREASE
OF TUMOR
RECURRENCE



Non Clinical Data

Clinical Data - Monotherapy

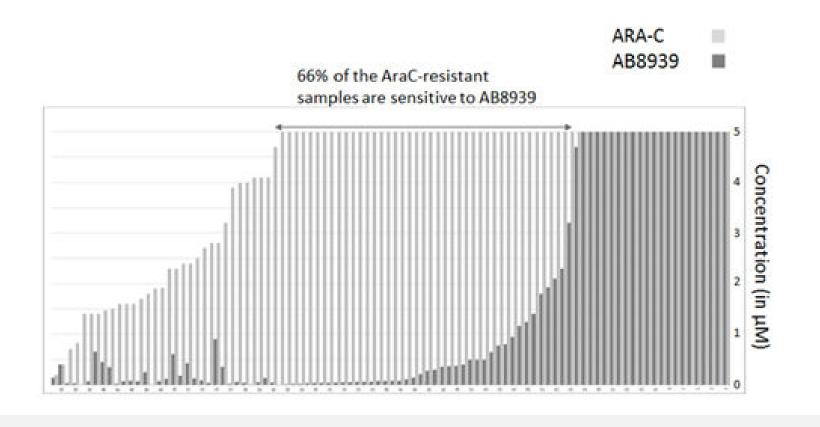
Clinical Data – Combination Therapy

Next Steps

Concluding Statements from AML Experts

In vitro, AB8939 has shown activity in Ara-C (cytarabine is one of the standard of care) resistant patients cell lines, including adverse genetic MECOM, TP53 mutated





- Among the blasts isolated from a cohort of 99 AML patients, ~70% are resistant to standard AraCytine-based chemotherapy
- Among blasts isolated from this cohort that are resistant to Ara-C, 66% remain sensitive to AB8939, including with adverse genetic (MECOM, TP53 mutated)

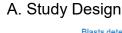
Analysis of cell lines responsive to AB8939 shows that AB8939 is effective in cell lines with TP53 muation, MECOM and complex karyotypes, when ARAC and azacitidine is not effective

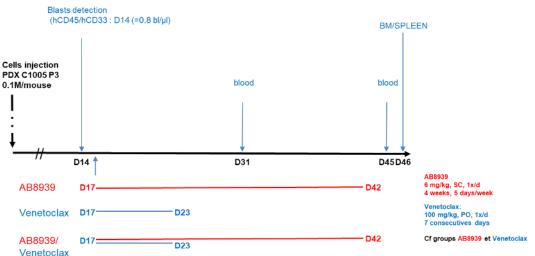


	karyotype											mu	tations											Drug se	nsitibity (I	C50 µM)
NUM_INCLUSIO N	complex	TP53	FLT3	FLT3- NPM1	IDH1	IDH2	TET2	RAS	RUNx1	IKZF1	BARD1	PTPN11	DNMT3	NPM1	PHF6	NF1	JAK2	WT1	NOTCH2	ETV6	месом	RAD21	APC	AB8939	ARAC	AZA
C1012 P3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0,013	7,9	9,7
C1018	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0,04	13,1	50
C1005-P2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0,05	4,1	NT
C1022	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0,06	>20	16,7
C1015	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0,08	>20	39,1
C1024	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0,12	2,3	20,4
C1028	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0,38	11,5	41,7
C1021	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0,94	>20	38,5

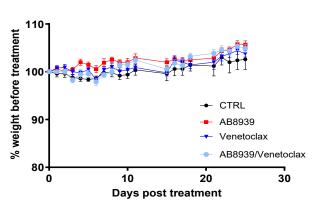
In vivo in mice, in a Mecom grafted PDX model, AB8939 increased survival and has an additive effect in combination with Venetoclax (another standard of care)

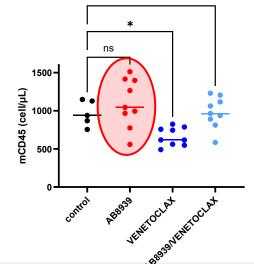






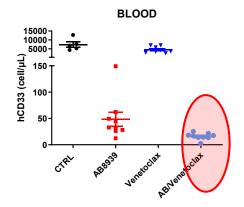
B. AB8939 monotherapy or combined with Venetoclax is well-tolerated: absence of any toxicity (left: weight curves) or hematotoxicity (right: hematopoietic progenitors mCD45)

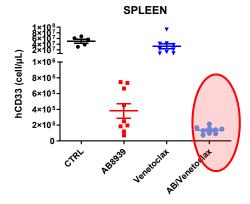


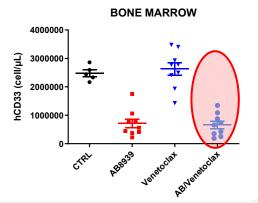


C.

AB8939/ Venetoclax combination allows the clearing of leukemia blasts in blood, spleen and bone marrow without adding toxicities.





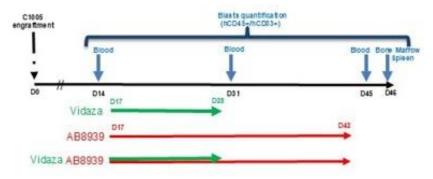


In vivo in mice, in the same Mecom PDX#C1005 model, AB8939 increased survival and has an additive effect in combination with Vidaza (another standard of care)

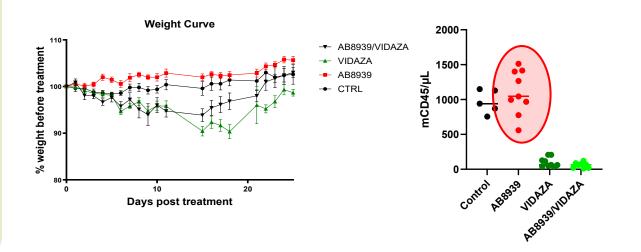


- AB8939/ vidaza combination allows the clearing of leukemia blasts in blood, spleen and bone marrow (C) without adding toxicities (B left panel weight).
- Unlike Vidaza, AB8939 does not induce any hematotoxicity (B right panel mCD45).

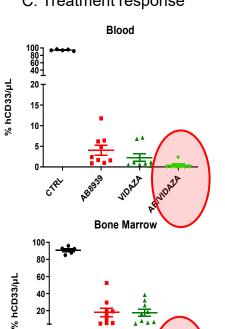
A. Study Design

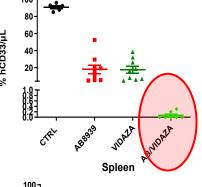


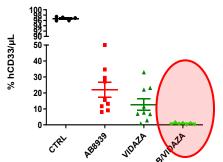
B. AB8939 monotherapy or combined with Azacytidine is well-tolerated: absence of any toxicity (left: weight curves) or hematotoxicity (right: hematopoietic progenitors mCD45)



C. Treatment response



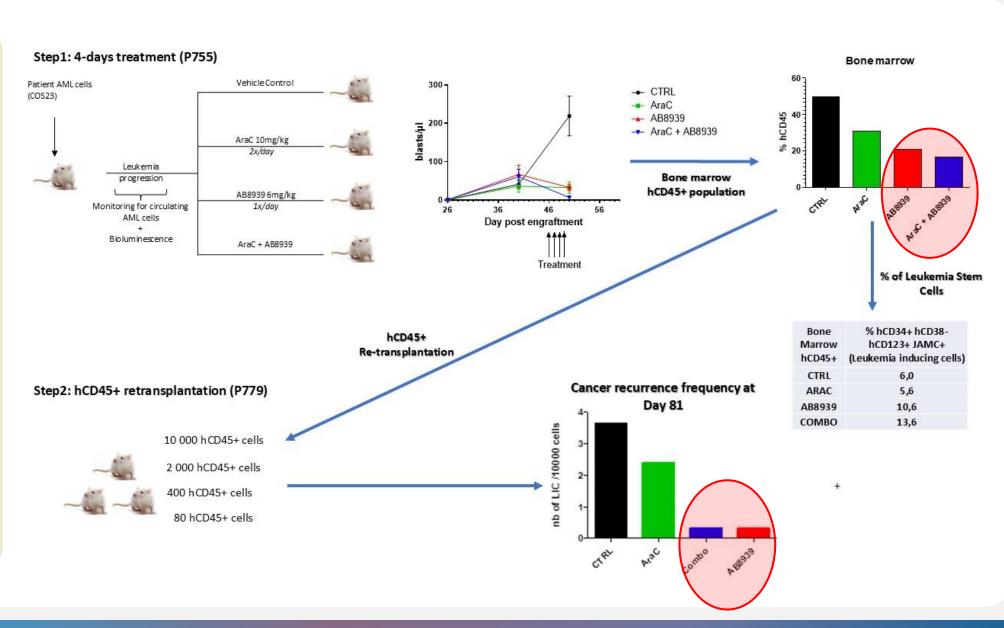




In vivo in mice, AB8939 was able to eradicate Leukemia Cancer Stem Cells in a human PDX AML animal model, which is compatible with the ALDH MoA targeting stem cells



- AB8939 reduced the re-occurrence of leukemia following re-transplanted of leukemia cells indicating that AB8939 treatment eradicated both leukemic blast and leukemia cancer stem cells(Step 2).
- AB8939 is believed to kill highly dividing blasts through microtubule disruption while it kills resting cancer Stem cells through inhibition of ALDHs.





Non Clinical Data

Clinical Data - Monotherapy

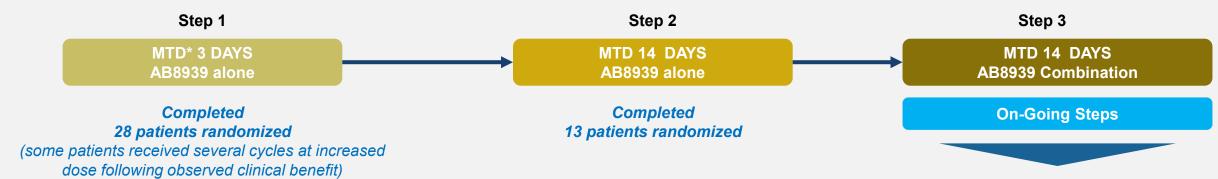
Clinical Data – Combination Therapy

Next Steps

Concluding Statements from AML Experts

Phase 1 in monotherapy has been completed and phase 1 in combination has begun





#	Dose	Patients	DLT	
1	0.9 mg/m ²	3	0	
2	1.8 mg/m ²	3	0	
3	3.6 mg/m ²	3	0	
4	6.0 mg/m ²	3	0	
5	9.0 mg/m ²	3	0	
6	12.0 mg/m ²	3	0	
7	16.0 mg/m ²	3	0	
 8	21.3 mg/m ²	4	1	MTD 3D
9	28.3 mg/m ²	3	2	

#	Dose	Patients	DLT	
1	16.0 mg/m ²	7	1	
2	21.3 mg/m ²	6	1	MTD 1

- AB8939 + Venetoclax
- AB8939 + Venetoclax + Azacitidine

AB8939 in monotherapy has shown activity in MECOM, based on non-clinical data and early clinical data, with long OS benefit



Non clinical in vitro evidence

50% response rate in in-vitro tests

In-vitro, AB8939 was effective (IC50 of 50nM and 13nM) against 2 out of 4 patient blasts with MECOM rearrangement

	Drug sensitivity (IC50 μM) in MECOM Karyotype					
Patient ID	AML type	AraC	AB8939	Azacitidine		
1135	MO	>20	>2	49,90		
1156	M0	>20	>5	>50		
C1005	M1 refractory	4,1	0,05	NT		
C1012	M4 refractory	7,9	0,013	9,7		

Clinical evidence in MECOM

- 50% response rate in early phase 1
 - 2 out of 4 patients with MECOM after 1 cycle of 3 days or 14 days AB8939 treatment below the MTD
 - Historical control shows 14% response rate⁽¹⁾
- 2 patients with 18 months and 11 months OS benefit

Patient ID	AB8939	Best Response
ES-12-001	0,9 mg/m², 3 days	Early discontinuation
ES-07-001	1.8 mg/m², 3 days,	Response (BM blast from 55% to 5%)
ES-07-002	16 mg/m², 14 days	Stable disease
GR-04-001	16 mg/m²,14 days	Response (BM blast from 13% to 3%)



Non Clinical Data

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Clinical Data – Combination Therapy

Next Steps

Concluding Statements from AML Experts

There is a strong rationale to combine AB8939 with Venetoclax



1. BOTH MOLECULES HAVE LOW HEMATOLOGIC TOXICITY

This combination is less toxic than azacitidine + venetoclax as first-line treatment for AML

2. BOTH MOLECULES HAVE DIFFERENT AND COMPLEMENTARY TARGETS IN CANCER CELLS

- There is an additive, even synergistic, efficacy potential for the combination, with 3 MoA in one treatment
- Venetoclax MoA is to inhibit BCL2 pathway, a protein that prevents apoptosis (programmed cell death) in cancer cells. BCL2 is a key factor in AML resistance, as it allows cancer cells to survive despite treatment
- AB8939 is pro-aopototic, destabilizing microtubule, and would benefit from BCL2 inhibition to optimize apoptosis
- In addition, AB8939 specifically targets cancer stem cells by inhibiting ALDH, reducing resistance to treatment and limiting the risk of relapse

In combination, AB8939 + Venetoclax remarkably generated responses in patients in Line 3 or 4 with high risk adverse profile, complex karyotypes, TP53, Mecom and NRAS mutation. There was no toxicity, no DLT



Patient ID	Treatment Line	Prognostic Risk	Response
ES-07-301	3rd Line	NRAS mutant	Complete remission with incomplete hematologic recovery (CRi)
ES-13-301	4th Line	Complex karyotype , mecom	Partial remission at D45 with no circulating blasts
ES-13-302	4th Line	Complex karyotype and TP53 mutation	Partial remission (PR)

Patient 1: AB8939 (14 days, 16 mg/m²) + Venetoclax



Baseline Characteristics

Age

74

- Prior treatments
- 1) Daunorubicine + cytarabine
- 2) Azacitidine
- 3) CLN-049-002
- Cytogenetic risks category

Adverse

 Cytogenetic, mutations details RUNX1 with VAF del 86%. mutation RUNX1 with VAF: 9.7% mutations DNMT3A, **NRAS**, PRPF8, PTPN x 3

Key Mutations

NRAS

Response

 Response evaluation D28 Complete remission with incomplete hematologic recovery (CRi)

Cycle 1 (14 days)

	Baseline	D28	D49
BM Blasts	8%	<1%	na
Blood Blasts	0%	0%	0%
Neutrophils	4,4	3,6	5.2
Platelets	59	27	47

 Venetoclax dosing (mg): D1 100, D2 200 and 400 until D8 and decreased to 100mg until D14 because of antifungal treatment

• Antifungal : posaconazole

Patient 2: AB8939 (14 days, 16 mg/m²) + Venetoclax



Baseline Characteristics

Age

73

- Prior treatments
- 1) Azacitidine
- 2) Cytarabin + venetoclax; Refractory
- Cytogenetic risks category

Adverse

Cytogenetic details

Complex karyotype:

45,XX,del(1)(34), add(2)(q22-

24),del(5)(q13q33), -

7,add(11)(p15),add(11)(q23),der(12)add(12)(

p13)del(12)(q14q21-23),-18,-

20,add(21)(p11.2),+2mar[3]/46,XX[1]

Key Mutation

TET2, over expression Evi1

FAB Classification

M0 : Undifferentiated acute myeloblastic

leukemia

Response

Response

- Stable disease (SD) at D28
- Partial remission at D45 with no circulating blasts

Cycle 1 (14 days)

	Baseline	D28	D45
BM Blasts	18%	23%	8%
Blood Blasts	44%	12%	0%
Neutrophils	1,33	1,12	1,32
Platelets	21	15	11

- Venetoclax dosing (mg): D1 50, D2 100 and 200 until D14
- Antifungal : Isavuconazole (ongoing during trial) + nystatin

(only D1 and after D14 for mouth health care)

Patient 3: AB8939 (14 days, 16 mg/m²) + Venetoclax



Baseline Characteristics

Age

75

- Prior treatments
- 1) Idarubicin + Cytarabine : Disease progression
- 2) FLAG+IDA; Refractory
- 3) Azacitidine+ Venetoclax; Refractory
- Cytogenetic risks category

Adverse

Cytogenetic details

Complex Karyotype

44,XY,del(5)(q13q33),add(12)(p11.2),-13,-16,-20,+mar1[5]/ 43,idem,add(1)(q22-24),-7,-18,-mar1,+mar2,+mar3[15

Key Mutation

TP53+

FAB Classification

M2 : Acute myeloblastic leukemia with maturation

Response

Response evaluation D28 Partial remission (PR)

Cycle 1 (14 days)

	Baseline	D28
BM Blasts	31%	14%
Blood Blasts	4%	2%
Neutrophils	1,07	0,37
Platelets	13	21

Venetoclax dosing (mg): D1 50, D2 100 and 200 until D14

Antifungal: Mycostatin (after D14 for mouth health care)

AB8939 + Venetoclax could become a new standard of care in particular for AML patients with adverse genetics



AB8939 + Venetoclax : a potentially new standard of care

- Venetoclax + Vidaza is the standard of care for aged patient not eligible to high dose chemotherapy in Line 1
- Venetoclax + Vidaza is known to be poorly effective in TP53 and NRAS mutant
- AB8939 preliminary data give credit to the hypothesis that the combination AB8939+venetoclax could become a new standard of care
- AB8939+venetoclax is less toxic than other combinations, in particular on hematoxicity



Non Clinical Data

Clinical Data - Monotherapy

Clinical Data – Combination Therapy

Next Steps

Concluding Statements from AML Experts

The next step is to finish phase 1 in combination and to launch an expansion study to maximize the chance of success of a registrational study



Implementation of the expansion study

15 AML patients eligible to AB8939 + Venetoclax at the right dose

Rationale

 Generate robust preliminary evidence of efficacy in the AML label to support the clinical development plan and trigger partnership agreement

There are 3 possibilities of registrational studies, not mutually exclusive, that we have started to discuss with FDA and EMA



AB8939 Positioning

Clinical Study Design

1

AB8939 + VENETOCLAX IN LINE 1 AGED PATIENTS, ADVERSE GENETICS

TP53mut+NRAS+KRAS+complex K+monosomy 5/7 + Mecom

- (AB8939 + Venetoclax) Vs (Venetoclax + Vidaza) =standard of care)
- Primary endpoint: CR+CRi
- Secondary endpoint: Survival
- 200 patients, randomized 1:1

2

AB8939 + VENETOCLAX IN LINE 2/3, ALL PATIENTS OR ADVERSE GENETICS

L2+L3, all patients or adverse genetics

- AB8939+venetoclax Vs best supportive care Vs AB8939
- Primary Endpoint: CR+Cri
- Secondary endpoint: survival
- 240 patients, randomized 1:1:1

3

AB8939 IN MECOM *L2+L3*

- AB8939 vs best supportive care
- Primary Endpoint: survival
- Secondary endpoint: CR+Cri
- 80 patients, randomized 1:1



Non Clinical Data

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Next Steps

Concluding Statements from AML Experts

CHRISTIAN AUCLAIR, PharmD, PhD



Professor Emeritus, Cofounder and former director of the PhD program in oncology at Institut Gustave Roussy, Paris-Saclay University

Concluding Pharmacological Remarks

- The AB8939 molecule was initially selected based on two criteria:
 - o i) its extreme efficacy in inhibiting proliferative tumor cells, particularly leukemic cell lines, and
 - ii) its extreme efficacy on cells expressing the multidrug resistance phenotype
- Subsequent investigations have shown that AB8939 was able to limit tumor recurrence in experimental models. This remarkable
 property is due to its ability to inhibit aldehyde dehydrogenase (ALDH), enzymes that provide metabolic support in tumor stem
 cells.
- This dual property makes AB8939 a molecule of choice for the treatment of refractory acute leukemia by reducing the frequency of relapses.
- Finally, AB8939 is a perfectly tolerated molecule characterized by a lack of bone marrow toxicity.

NICHOLAS SHORT, MD, PhD

AB SCIENCE

Associate Professor, Department of Leukemia, MD Anderson Cancer Center

- TP53-mutated and MECOM rearranged AML are the worst subtypes of AML
- Limited response with standard therapies
- Median OS ~6 months, no standard of care
- In older adults treated with HMA + venetoclax, NRAS/KRAS mutations is also associated with a poor prognosis
- Median OS ~12 months

Single-agent AB8939 showed activity in MECOM

- Response in 2 of 4 patients with MECOM rearrangement
- For reference, in other unmet needs (e.g. KMT2Ar leukemias),
 CR/CRh rate of ~20% sufficient for FDA approval in single-arm study
- AB8939 + venetoclax appears safe + and able to generate significant blast reductions in ultra-high-risk AML
- Significant blast reductions in ultra-high-risk AML with TP53-mutated AML after HMA + venetoclax)

- Early data suggest that AB8939 (monotherapy and/or combination) may have significant activity in the highest risk subtypes of AML
- If similar responses rates and safety are observed during trial expansion, AB8939 well-positioned for development in adverse-risk AML in frontline and salvage settings



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Concluding Statements from AML Experts

The objective is to position AB8939 combination treatment to be the standard of care in AML with a high risk profile adverse genetic, which represents a market size potential above EUR 2 billions per annum



- Adverse genetics regroup TP53 mutant, NRAS/KRAS mutant, complex karyotype, monosomy 5 and 7, Mecom
- It represents around 50% of patients.
- These patients are refractory to or relapsing the current standard of care. Median survival is less than 12 months

Region	Incidence Case (1)	% high risk profile (2)	% Insured Patients (3)	Drug Price (€)	Market Size (per in in Mio EUR)
USA / CANADA	23,700		90%	100,000 ⁽⁵⁾	1 000 000
EUROPE	27,600		90%	60,000	770 000
APAC	27,800	F00/	30%	60,000	250 000
INDIA	11,000	50%	30%	60,000	100,000
LATAM	7,200		30%	60,000	65 000
MENA	3,900		30%	60,000	35 000
TOTAL	90,200				2 200 000

- (1) Zhou, Y et al. Global, regional, and national burden of acute myeloid leukemia, 1990–2021: a systematic analysis for the global burden of disease study 2021. Biomark Res 12, 101 (2024).
- (2) estimated
- (3) Estimated
- (4) Choi M. et al. Costs per patient achieving remission with venetoclax-based combinations in newly diagnosed patients with acute myeloid leukemia ineligible for intensive induction chemotherapy. Journal of Managed Care & Specialty Pharmacy Volume 28, Number 9. https://doi.org/10.18553/jmcp.2022.22021

AB8939 intellectual property rights in AML are secured until 2036 through a 'composition of matter' patent and 2041 with extension, and potentially until 2044 in AML with chromosome abnormality through a 'second medical use' patent.



Protection	Exclusivity period	Enforcement
Orphan drug status	7-year protection as of FDA approval 10-year protection as of EMA approval	 Granted in the USA To be filed with EMA
Composition of Matter patent	Until February 2036 + 5 years extension	Granted (United States / Europe / China / Hong Kong / Japan / South Korea / India / Mexico / Israel / Brazil / South Africa / Russia / Australia)
Second Medical Use patent	Until February 2044 (if granted)	PCT patent application filed for AML subpopulation with chromosome abnormality