

ALX148: Designed For Safety To Maximize Efficacy

Don't eat me

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OVERVIEW

ALX Oncology (Nasdaq: ALXO) is a clinicalstage immuno-oncology company focused on helping patients fight cancer by developing therapies that block the CD47 checkpoint pathway and bridge the innate and adaptive immune system

Lead product candidate, ALX148

CD47 blocker

- Designed for use in combination
- Tolerability profile enables higher dosing
- Higher dosing may enable greater efficacy

Clinical proof-of-principle in both hematologic and solid tumors

Initial focus on MDS, AML and solid tumors

CD47: TUMOR ASSOCIATED ANTIGEN (TAA)- MYELOID CHECKPOINT DUALITY



Checkpoint Mechanism: "do not eat me"



CD47 RNA EXPRESSION ACROSS NORMAL TISSUES



Using CD47 directly targeting cancer cells as TAA will be limited by on-target off-tissue toxicity



TARGETING CD47 AS TUMOR ASSOCIATED ANTIGEN



Anti CD47 with active Fc directly targets cancer cells

But also targets normal cells



Dose limitations prevent full blockade of CD47 and active fc competes with combo drug

TARGETING CD47 AS CHECKPOINT: ALX ONCOLOGY'S APPROACH



It spares normal cells

Anti CD47 with inactive Fc binds and block CD47-Sirp α interaction

High dose allows full blockade of CD47 and maximizes activity of combo drug

AFFINITY TO CD47 AND FC γ RECEPTORS

Name		Fc Doma (Huma	ain n)	KD huma CD47 (nN	in ⁄I)	KD mouse CD47 (nM)	Effector function	
ALX148		IgG1 DEAD)	0.14		9	-	
ALX216		IgG4 S228P		0.14		9	++	
ALX377		lgG1 wt		0.14		9	++++	
ALX126		lgG1 DEAD		3	3		-	
5F9 (magrolimab)*	lgG4 S228	Р	7		NB	++	
TTI-621*	TI-621*		lgG1 wt		500		++++	
TTI-622*		IgG4 S228P		500		NB	++	
*molecules produced at ALX Oncology, based on public information								
Fc Domain	(K (CD16a (D nM)	(}	CD32a (D nM)		CD32b/c (KD nM)	CD64 (KD nM)	
lgG1		370		400		2000	0.004	
lgG4 S228P		3000		810		850	1	
IgG1 DEAD		NB		NB		NB	NB	

Research tools

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CD47 binding domains



ALX Oncology

KD measured by SPR at ALX Oncology

SINGLE AGENT: INCREASE EFFECTOR FUNCTION ENHANCES PHAGOCYTOSIS



DLD1 cancer cells

All molecules with same high affinity CD47 binding domain (KD 140 pM)

SINGLE

SINGLE AGENT: INCREASED EFFECTOR FUNCTION INCREASES CYTOPENIAS

All molecules with same high affinity CD47 binding domain (KD 9 nM for MOUSE CD47)







CD-1 mice received 30 mg/kg IV single dose

****p<0.0001, ***p<0.001

Inactive Fc is the core determinant of safety profile

SINGLE AGENT: INCREASE OF CD47 AFFINITY ENHANCES PHAGOCYTOSIS

All molecules with same effector function (IgG4)



CD47 as TAA does not require 100% receptor occupancy, but there is higher activity at higher occupancy



SINGLE

COMBINATION: ACTIVE FC DOES NOT ENHANCE ANTICANCER ANTIBODY



NP Don406 combo

High affinity and no effector function maximizes the phagocytosis of combo drug in vitro

COMBO

CD47 AS CHECKPOINT: HIGH AFFINITY IS REQUIRED TO INHIBIT CELL/CELL INTERACTION

SIGNALING



% Inhibition of SIRPa Signaling using the DIscoverX PathHunter SIRPa Signaling Bioassay



100% inhibition is achieved at near complete receptor occupancy level



CD47-SIRP α INTERACTION INHIBIT DENDRITIC CELLS IN TUMOR MICROENVIRONMENT



CD47-Sirp α interaction inhibits Dendritic cells and keep macrophages in M2 phenotype

Activated DC present antigens to Tcells and these get activated and attack cancer cells

CD47 AS CP: HIGH AFFINITY IS REQUIRED TO DEREPRESS DC IN VIVO

3 mpk ALX148 or ALX126

I.P.

↓ 3.5hrs Harvest Spleen ↓ Measure activation of DCs by flow cytometry





In VIVO

ALX148: METICULOUSLY DESIGNED CD47 BLOCKER



Designed for safety and efficacy

High affinity CD47 binding domains of SIRP $\!\alpha$



- ~Half the molecular weight of an antibody
- Increases solid tumor penetration
- Standard antibody manufacturing process

PIPELINE: COMBINATION TRIALS WITH ALX148

	Indication	IND filing preparation	IND submitted	Phase 1	Phase 2	Phase 3	Fast track
HNSCC Head And Neck Squamous Cell Carcinoma	HNSCC	Keytruda					
	Keytruda + 5FU + platinum						
	GC Gastric/	Herceptin					
	Gastroesophageal Junction Cancer	Herceptin + Cyramza + paclit	axel				
MDS Myelodysplastic Syndromes AML Acute Myeloid Leukemia	azacitidine						
	AML Acute Myeloid Leukemia	azacitidine + venetoclax					
	NHL Non-Hodgkin's Lymphoma	Rituximab					

>150 patients dosed with ALX148 since 2017

ALX148 DEMONSTRATES CONSISTENT TOLERABILITY PROFILE

Treatment related adverse events	ALX + Rituxa	2 148 n (N=33)	ALX + Keytruc	1 48 da (N=52)	ALX148 + Herceptin (N=30)	
	Total n (%)	≥Grade 3	Total n (%)	≥Grade 3	Total n (%)	≥Grade 3
Fatigue	3 (9.1%)		6 (11.5%)	-	9 (30.0%)	-
Rash	6 (18.2%)	-	5 (9.6%)	-	2 / 1	-
AST increased		-	9 (17.3%)	-		-
Platelets decreased		-	4 (7.7%)	2 (3.8%)	5 (16.7%)	2 (6.7%)
ALT increased	1.	-	7 (13.5%)	1 (1.9%)		-
Pruritus	and a said	-	5 (9.6%)	-	3 (10.0%)	-
Pyrexia		-	3 (5.8%)	-	3 (10.0%)	-
Decreased appetite	-	-	2 (3.8%)	- 22	3 (10.0%)	-
Anemia	2 (6.1%)	1 (3.0%)	5 (9.6%)	1 (1.9%)	2 (6.7%)	-
Infusion reaction	(-	4 (7.7%)	-	-	-
Neutropenia / Neutrophil count decr	2 (6.1%)	2 (6.1%)	2 (3.8%)	1 (1.9%)	2 (6.7%)	2 (6.7%)
Nausea	2 (6.1%)	-	2 (3.8%)	-	2 (6.7%)	-
Alkaline phosphatase incr		-	3 (5.8%)	-	-	-
Arthralgia	1. 1. 1. 1. 1.	-	3 (5.8%)	-	-	-
WBC decreased			3 (5.8%)	-	-	-
Myalgia		-	2 (3.8%)	-	-	-

Tolerability profile may enable broad combination potential

Treatment related adverse events occurring in \geq 2 subjects in all histologies at 10 & 15 mg/kg QW. Data Cutoff 1 April 2020.

ALX148 CLINICAL PHARMACOKINETICS AND CD47 TARGET OCCUPANCY



CD47 Target Occupancy by ALX148



- Steady-state half-life of ALX148 at 10 mg/kg QW is predicted to be ~30 days.
- ALX148 PK profile (10 mg/kg QW) is not impacted by combination drugs.

- Near complete CD47 target occupancy (TO) by ALX148 is maintained at ≥ 3 mg/kg QW across dosing interval
- 0.3 and 1 mg/kg QW show near complete target occupancy at peak, but not at throat

NHL PROOF-OF-PRINCIPLE TRIAL

hase 1b NHL cohorts		10 mg/kg QW		15 mg/kg QW	
	Population	Ν	ORR	Ν	ORR
Relapsed/Refractory NHL, prior regimen with Rituxan	All	22	40.9%	11	54.6%
Treatment: ALX148 10 or 15 mg/kg once a	Aggressive	15	33.3%	7	42.9%
Rituxan 375 mg/m ² once a week for 4 weeks, once monthly for 8 months	Indolent	7	57.1%	4	75.0%

EHA 2020 Abstract EP1247

N=Response evaluable patients

Indolent = Follicular Lymphoma and Marginal Zone Lymphoma. **Aggressive** = Diffuse Large B-cell Lymphoma and Mantle Cell Lymphoma. **ORR** = Objective Response Rate.

ALX148 demonstrated higher response rate at higher dosing

ALX148 HAS INITIAL CLINICAL ACTIVITY ACROSS TUMOR TYPES IN MULTIPLE TRIALS

Population	≥2L HE	R2+ GC	≥2L HER2+ GC	≥2L (CPI-I	INSCC Naïve)	1L H	≥2L NHL	
Combination	ALX148 + + Cyramza	Herceptin + paclitaxel	ALX148 + Herceptin	ALX + Key	(148 /truda	ALX148 + Keytruda + 5FU + platinum		ALX148 + Rituxan
N-evaluable	Q)	19	1	10	3		33
ORR	ALX148 66%	Benchmark 28%	21%	ALX148 40%	Benchmark 15%	ALX148 66%	Benchmark 36%	54.6%
Benchmark regimen	Cyramza +	paclitaxel		Single age	nt Keytruda	Keytruda + 5FU + platinum		

Solid tumor data as of June 30, 2020. NHL data as of April 1, 2020 EHA June 2020 Abstract EP1247. ORR = Objective Response Rate, CPI = checkpoint inhibitor. Ram/pac benchmark in GC from RAINBOW Ph3 trial (Wilke, Lancet Oncology, 2014); Keytruda single agent benchmark from KEYNOTE-40 Ph3 trial (Cohen, Lancet, 2018). Keytruda + chemo benchmark from KEYNOTE-48 Ph3 trial (Burtness, Lancet, 2019).



SUMMARY

High affinity and no effector function is required to fully inhibit CD47 safely \checkmark

ALX148 tolerability profile enables combination with a wide range of agents Demonstrated clinical tolerability with anti-cancer antibodies and chemotherapy Clinical proof-of-principle in hematologic and solid tumors

ACKNOWLEDGEMENTS

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