

I-Mab BioPharma (IMAB US)

Uliledlimab (CD73) showed preliminary efficacy in treatment-naïve advanced NSCLC patients

■ **Phase 2 data of uliledlimab released.** I-Mab released the latest data of the China Ph2 trial (NCT04322006) of uliledlimab in combo with toripalimab (PD-1 mAb) in NSCLC patients ([link](#)). Among three NSCLC cohorts, the highest response rates were observed in Cohort 3 in advanced NSCLC (mostly stage IV) who were previously ineligible for SoC, while the other two cohorts with heavily treated advanced NSCLC showed a lower response. Among 19 evaluable patients from Cohort 3, five PRs (ORR=26%) and nine SDs (DCR=74%) were observed. Given that the current median follow-up was merely 3.3 months, ORR may further improve as the data continue to mature. It was also worth noting that c. 80% patients in Cohort 3 had low PD-L1 expression (TPS<50%) who were usually less responsive to a checkpoint inhibitor therapy as demonstrated in the KEYNOTE-042 study (ORR=17% for patients with PD-L1 TPS 1-49%). Meanwhile, uliledlimab was safe and well-tolerated both as a monotherapy and in combo with toripalimab with no DLT observed in the entire 115 patients of the Ph2 study as of Mar 2022.

■ **CD73 is a potential predictive biomarker.** In the Ph2 trial, the treatment response was highly correlated with CD73 expression in tumors. High CD73 expression was found in 80% (4/5) PR patients with a mean value of 53.4% and 44% (4/9) SD patients with a mean value of 30.5%, while the five remaining progressed patients had a low level of CD73 expression with a mean expression value of 19.2%. CD73 expression was higher in the patients who had clinical response in other NSCLC cohorts as well. Consistent with previous Ph1 study, these results indicated the potential of CD73 as a predictive biomarker. As the first mover, I-Mab has started to work with WuXiDiagnostics to develop a CD73 companion diagnostics kit which will be used in future clinical studies of uliledlimab.

■ **To initiate a Ph3 study in NSCLC in 2023.** I-Mab plans to expand the ongoing study focusing on the selected NSCLC patient cohort, and aims to initiate a Ph3 registrational trial of uliledlimab in NSCLC next year. The Company also expects to initiate another trial in the US in other selected cancers and beyond combination with PD-(L)1 therapy in the next 12 months. As one of the globally most advanced CD73 antibodies, uliledlimab is differentiated in design to avoid a hook effect (antibody loses its effectiveness at high concentrations) which was seen in other clinical-stage CD73 mAbs, including AstraZeneca's oleclumab. Thus, uliledlimab has a larger therapeutic window to combine with other drugs for cancer treatment. We think uliledlimab has potential to achieve a blockbuster out-license deal.

■ **Maintain BUY.** Considering the temporary delay in the BLA filing of felzartamab (CD38 mAb), the changing landscape of CD73 inhibitors and the rising cost of capital globally, we revised down our DCF-based TP from US\$103.60 to US\$70.25 (WACC: 10.0%, terminal growth rate: 3.0%).

Earnings Summary

(YE 31 Dec)	FY20A	FY21A	FY22E	FY23E	FY24E
Revenue (RMB mn)	1,543	88	814	853	1,926
Net profit (RMB mn)	471	(2,332)	(1,178)	(1,096)	(224)
EPS (RMB per ADS)	8.07	(30.69)	(14.74)	(13.72)	(2.80)
Consensus EPS (RMB per ADS)	N/A	N/A	(11.81)	(10.55)	(6.52)
R&D expenses (RMB mn)	(985)	(1,213)	(1,000)	(1,000)	(1,000)
Admin expenses (RMB mn)	(402)	(900)	(700)	(735)	(772)
Capex (RMB mn)	(8)	(100)	(30)	(30)	(30)

Source: Company data, Bloomberg, CMBIGM estimates

BUY (Maintain)

Target Price **US\$70.25**
 (Previous TP **US\$103.60**)
 Up/Downside **+749.46%**
 Current Price **US\$8.27**

China Healthcare Sector

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Mkt. Cap. (US\$ mn) 683
 Avg. 3mths t/o (US\$ mn) 19.92
 52W High/Low (US\$) 85.40/8.12
 Total Issued Shares (mn) 83
 Source: Bloomberg

Shareholding Structure

C-Bridge 15.5%
 T.Rowe Price 8.9%
 Hillhouse Capital 8.7%
 GIC 5.7%
 Founder 5.1%
 Others 56.1%

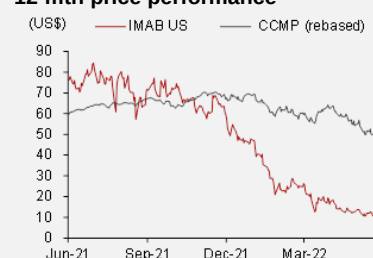
Source: Company annual report, as of Mar 2022

Share performance

	Absolute	Relative
1-mth	-33.6%	-31.7%
3-mth	-66.9%	-62.6%
6-mth	-86.9%	-83.3%

Source: Bloomberg

12-mth price performance



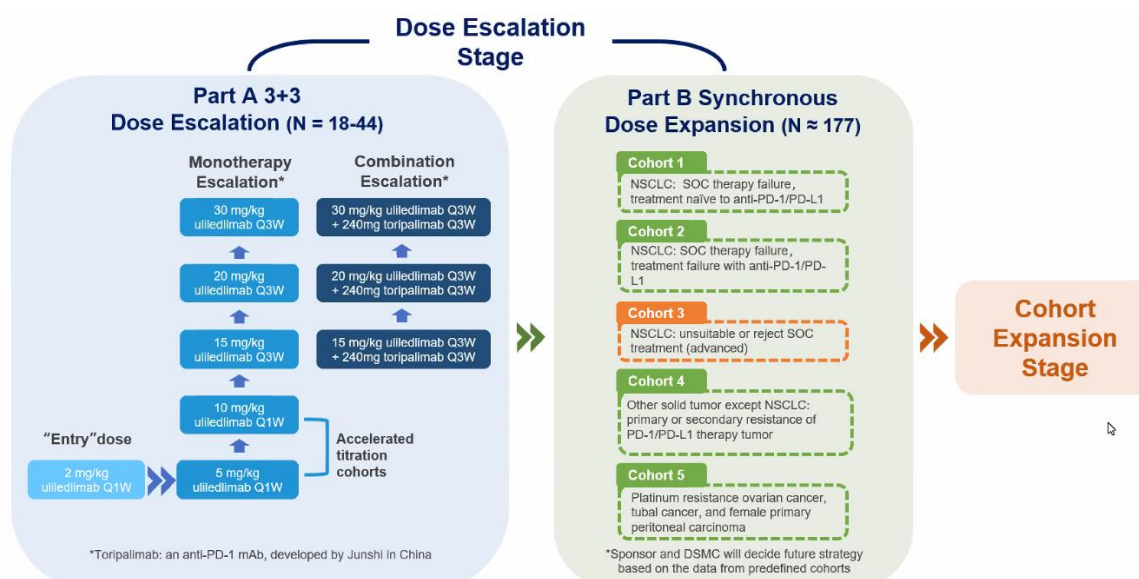
Source: Bloomberg

Auditor: PWC
Web-site: www.i-mabbiopharma.com

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Figure 1: Study design of the China Ph2 trial of uliledlimab (NCT04322006)



Source: Company presentation, CMBIGM

Figure 2: Comparison of uliledlimab and oleclumab

Properties	Uliledlimab	Oleclumab
Binding epitope	C-terminus	N-terminus
Binding mode	Intra-dimer monovalent binding	Inter-dimer bivalent binding
CD73 enzymatic inhibition	Complete inhibition with no "hook effect"	"Hook effect" observed at high doses

Summary of Clinical Responses: Uliledlimab vs Oleclumab

	Uliledlimab	Oleclumab
Dose used	20 mg/kg, Q3W	3,000 mg Q2W C1/C2, 3,000 mg Q4W C3+
PK/PD relationship	Full saturation of RO achieved ≥ 5 mg/kg Analysis of biopsied tumor specimens ongoing	Incomplete CD73 inhibition in tumors at the highest dose (40 mg/kg) ¹
Ph 1	uliledlimab + atezolizumab in advanced solid tumors (n=13), ORR = 23%; DCR = 46% ²	oleclumab + durvalumab in advanced solid tumors (n=24): No responder reported Ph 1/2 ³ : PDAC (n=42): ORR=4.8%; DCR=23.8%; MSS-CRC (n=42): ORR=2.4%; DCR=21.4%; EGFRm NSCLC (n=42): ORR=9.5%, DCR=31%
NSCLC stage	Mostly Stage IV	Stage III
Treatment	Previously untreated with chemo or radiation therapy	Treated with platinum-based cCRT within 42 days and showing no disease progression prior to entry
PD-L1 level	PD-L1 data available in 17/19 Low/negative (TPS 1-49%, TPS <1%) = 88.2% (15/17) High (TPS $\geq 50\%$) = 11.8% (2/17)	PD-L1 data available in 30/60 TC < 1% = 23.3% (7/30) TC $\geq 1\%$ = 76.7% (23/30)
Efficacy	uliledlimab + toripalimab, medium follow-up 3.3 months (data are still maturing) ORR = 26% (5/19), DCR = 74% (14/19) Reference pembrolizumab monotherapy ORR 16.9% in a similar clinical setting / NSCLC patients (KEYNOTE-042) ⁴	oleclumab + durvalumab, median follow-up 11.5 months ORR = 30% (18/60), DCR = 80% (48/60) Dur monotherapy: ORR = 17.9% (12/67), DCR = 55.2% (37/67) ⁵

1. #4123 ASCO 2018; 2. #2511 ASCO 2021; 3. #9047 ASCO 2021; 4. Mok TS et al. LANCET 2019; 5. Roy SH et al. J Clin Oncol. 2022

Source: Company presentation, CMBIGM

Figure 3: Risk-adjusted DCF valuation

DCF Valuation (RMB mn)	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
EBIT	(1,178)	(1,096)	(224)	1,320	2,135	3,428	4,058	4,671	5,180	5,881	5,976	6,215	6,125	6,396
Tax rate	0%	0%	0%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
EBIT*(1-tax rate)	(1,178)	(1,096)	(224)	1,122	1,815	2,914	3,449	3,970	4,403	4,999	5,079	5,283	5,207	5,437
+ D&A	37	40	42	44	45	46	47	48	48	48	49	49	49	49
- Change in working capital	(533)	(5)	(102)	(704)	(342)	(270)	(209)	(148)	(113)	(94)	(45)	(30)	(16)	(4)
- Capex	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)	(30)
FCFF	(1,704)	(1,091)	(313)	431	1,488	2,660	3,257	3,840	4,308	4,923	5,053	5,271	5,209	5,452
Terminal value														80,341
FCF + Terminal value	(1,704)	(1,091)	(313)	431	1,488	2,660	3,257	3,840	4,308	4,923	5,053	5,271	5,209	85,794

PV of enterprise (RMB mn)	34,814
Net debt (RMB mn)	(1,738)
Equity value (RMB mn)	36,552
Equity value (US\$ mn)	5,615
No. of ADS	79,924,675
DCF per share (US\$)	70.25

Terminal growth rate	3.0%
WACC	10.0%
Cost of Equity	12.5%
Cost of Debt	5.0%
Equity Beta	0.90
Risk Free Rate	3.0%
Market Risk Premium	10.5%
Target Debt to Asset ratio	30.0%
Effective Corporate Tax Rate	15.0%

Source: CMBIGM estimates

Figure 4: Sensitivity analysis (US\$)

		WACC				
		9.0%	9.5%	10.0%	10.5%	11.0%
Terminal growth rate	4.0%	97.77	86.69	77.51	69.80	63.24
	3.5%	91.53	81.78	73.60	66.64	60.66
	3.0%	86.32	77.64	70.25	63.90	58.40
	2.5%	81.92	74.08	67.35	61.51	56.41
	2.0%	78.15	71.00	64.81	59.40	54.64

Source: Company data, CMBIGM estimates

Figure 5: CMBIGM estimates revision

RMB mn	New			Old			Diff (%)		
	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E
Revenue	814	853	1,926	794	1,270	2,040	2%	-33%	-6%
Gross Profit	814	850	1,865	794	1,247	1,961	2%	-32%	-5%
Operating Profit	(1,186)	(1,097)	(221)	(1,206)	(775)	(185)	NA	NA	NA
Net profit	(1,178)	(1,096)	(224)	(1,198)	(773)	(186)	NA	NA	NA
EPS (RMB)	(14.74)	(13.72)	(2.80)	(14.99)	(9.68)	(2.33)	NA	NA	NA
Gross Margin	100.00%	99.63%	96.80%	100.00%	98.25%	96.12%	0.00 ppt	+1.38 ppt	+0.67 ppt

Source: Company data, CMBIGM estimates

Figure 6: CMBIGM estimates vs consensus

RMB mn	CMBIGM			Consensus			Diff (%)		
	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E
Revenue	814	853	1,926	744	965	1,494	9%	-12%	29%
Gross Profit	814	850	1,865	723	916	1,345	13%	-7%	39%
Operating Profit	(1,186)	(1,097)	(221)	(1,344)	(1,331)	(1,003)	N/A	N/A	N/A
Net profit	(1,178)	(1,096)	(224)	(1,407)	(1,426)	(1,060)	N/A	N/A	N/A
EPS (RMB)	(14.74)	(13.72)	(2.80)	(11.81)	(10.55)	(6.52)	N/A	N/A	N/A
Gross Margin	100.00%	99.63%	96.80%	97.08%	94.96%	90.03%	+2.92 ppt	+4.67 ppt	+6.77 ppt

Source: Company data, Bloomberg, CMBIGM estimates

Financial Statements

Income statement

YE Dec 31 (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
Revenue	1,543	88	814	853	1,926
Cost of sales	0	(46)	0	(3)	(62)
Gross profit	1,543	42	814	850	1,865
Administrative expenses	(402)	(900)	(700)	(735)	(772)
R&D expenses	(985)	(1,213)	(1,000)	(1,000)	(1,000)
Selling expenses	0	0	0	(12)	(214)
Other gains/losses	304	(285)	(300)	(200)	(100)
Operating profit	460	(2,356)	(1,186)	(1,097)	(221)
Finance costs, net	23	21	8	1	(3)
Pre-tax profit	483	(2,335)	(1,178)	(1,096)	(224)
Income tax	(12)	3	0	0	0
Minority interests and others	0	0	0	0	0
Attributable net profit (Net loss)	471	(2,332)	(1,178)	(1,096)	(224)

Cash flow summary

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
Profit before tax	471	(2,332)	(1,178)	(1,096)	(224)
Depreciation and amortization, etc.	22	33	37	40	42
Change in working capital	(241)	389	(533)	(5)	(102)
Tax paid	0	0	0	0	0
Others	182	937	0	0	0
Net cash from operating activities	434	(973)	(1,674)	(1,061)	(283)
Capex	(8)	(30)	(30)	(30)	(30)
Net proceeds from disposal of short-term investments	12	(691)	0	0	0
Other investing activities	(206)	(6)	0	0	0
Net cash from investing activities	(202)	(727)	(30)	(30)	(30)
Net proceeds from shares	3,518	(79)	0	0	0
Net bank borrowing	(50)	0	0	0	0
Proceeds from issuance of convertible promissory notes	0	0	0	0	0
Other financing activities	(28)	673	0	0	0
Net cash from financing activities	3,440	594	0	0	0
FX changes	(107)	(129)	0	0	0
Net change in cash	3,672	(1,106)	(1,704)	(1,091)	(313)
Cash at the beginning of the year	1,193	4,759	3,524	1,819	728
Cash at the end of the year	4,759	3,524	1,819	728	415

Balance sheet

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
Non-current assets	990	848	841	831	818
PP&E	25	46	58	68	75
Operating lease right of use assets	15	113	93	74	54
Intangible assets	120	120	120	120	120
Goodwill	163	163	163	163	163
Other non-current assets	667	407	407	407	407
Current assets	5,344	4,782	3,017	1,932	1,750
Inventories	0	27	0	1	20
Trade and bills receivables	130	33	0	6	117
Prepayments, other receivables	195	191	191	191	191
Other financial assets	259	1,007	1,007	1,007	1,007
Cash and bank balances	4,759	3,524	1,819	728	415
Current liabilities	576	624	31	32	61
Short-term borrowings	0	0	0	0	0
Advance from customers	0	0	0	0	0
Other payables and accruals	561	593	0	2	30
Operating lease liabilities, current	8	31	31	31	31
Other current liabilities	8	0	0	0	0
Non-current liabilities	131	418	418	418	418
Convertible promissory notes	0	0	0	0	0
Onshore convertible loans	6	82	82	82	82
Other non-current liabilities	125	336	336	336	336
Total net assets	5,627	4,588	3,410	2,313	2,090
Minority interest	0	0	0	0	0
Shareholders' equity	5,627	4,588	3,410	2,313	2,090

Key ratios

YE 31 Dec	FY20A	FY21A	FY22E	FY23E	FY24E
Profit & loss ratios (%)					
Gross margin	100	100	85	86	87
EBITDA margin	N/A	N/A	N/A	N/A	N/A
Net margin	N/A	N/A	N/A	N/A	N/A
Effective tax rate (%)	3	N/A	N/A	N/A	N/A
Balance sheet ratios					
Current ratio (x)	9	8	98	60	29
Trade receivables turnover	N/A	90	90	90	90
Trade payables turnover days	N/A	180	180	180	180
Total debt to asset ratio (%)	11	19	12	16	19
Returns (%)					
ROE	8	(51)	(35)	(47)	(11)
ROA	7	(41)	(31)	(40)	(9)
Per share data					
EPS (RMB)	8.07	(30.69)	(14.74)	(13.72)	(2.80)
DPS (RMB)	0	0	0	0	0
BVPS (RMB)	96.47	60.40	42.66	28.94	26.14

Source: Company data, CMBIGM estimates

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