# Results of a Phase 1b/2 Study of ADG126 (a Masked Anti-CTLA-4 SAFEbody®) in Combination with Pembrolizumab (Pembro) in Patients with Metastatic Microsatellite-stable (MSS) Colorectal Cancer (CRC)

Daneng Li<sup>1\*</sup>, Hee Kyung Kim<sup>2</sup>, Sun Young Kim<sup>3</sup>, Sunil Sharma<sup>4</sup>, Sang Joon Shin<sup>5</sup>, Jeeyun Lee<sup>6</sup>, Byoung Yong Shim<sup>7</sup>, Keon Uk Park<sup>8</sup>, Sung Yong Oh<sup>9</sup>, Seock-Ah Im<sup>10</sup>, Yun-Gyoo Lee<sup>11</sup>, Kristine She<sup>12</sup>, Wenda Li<sup>12</sup>, Ping Xiao<sup>12</sup>, Guizhong Liu<sup>12</sup>, Songmao Zheng<sup>12</sup>, Yan Li<sup>12</sup>, Dana Hu-Lowe<sup>12</sup>, Stanley Frankel<sup>12</sup>, Michael Chisamore<sup>13</sup>, Peter Luo<sup>12</sup>, Jiping Zha<sup>12</sup> and Manish R. Patel<sup>14</sup>

<sup>1.</sup> City of Hope Comprehensive Cancer Center, Los Angeles, USA; 2. Chungbuk National University Hospital, Republic of Korea; 3. Asan Medical Center, University of Ulsan College of Medicine, Republic of Korea; 4. Honor Health Research Institute, Scottsdale, AZ. 5. Severance Hospital, Yonsei University; Republic of Korea; 6. Samsung medical Center, Republic of Korea; 7. St. Vincent Hospital, the Catholic University Of Korea, Republic of Korea; 8. Keimyung University Dongsan Medical Hospital, Republic of Korea, 9. Donga University Hospital, Republic of Korea; 10. Medical Oncology, Seoul National University Hospital, Republic of Korea; 11. Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Republic of Korea; 12. Adagene Inc., San Diego, CA 92121, USA; 13. Merck & Co., Inc., Rahway, NJ, USA; 14. Florida Cancer Specialists/Sarah Cannon Research Institute, USA. \* Presenting author

### Background

- ADG126 (muzastotug) is a fully human masked anti-CTLA-4 IgG1 SAFEbody® that is designed to allow preferential activation in the tumor microenvironment (TME) which enables prolonged on-tumor drug exposure and limited systemic toxicity, affording enhanced therapeutic index (TI).
- Activated ADG126 binds to a unique CTLA-4 epitope to prime T cells and deplete immunosuppressive
   Tregs through strong antibody-dependent cellular cytotoxicity (ADCC)/phagocytosis (ADCP). Preclinical
   studies showed that ADG126/anti-PD-1 combination effectively increases Teff/Treg ratio<sup>1</sup>. In early Phase
   1b/2 studies, ADG126 demonstrated a favorable safety profile and clinical efficacy as monotherapy and in
   combination with anti-PD-1 therapy<sup>2-4</sup>.
- Interim results of study ADG126-P001 (a combination study of ADG126 with pembrolizumab (Pembro), NCT05405595) include:
- Safety profile of patients (Pts) in dose escalation (all comers, N=11) and the dose expansion (n=35).
- Clinical activity summary of the dose escalation cohort and an in-depth efficacy analysis of MSS CRC Pts in dose expansion cohorts.

<sup>1.</sup> A novel anti-CTLA-4 checkpoint inhibitor prodrug to address on-target off-tumor toxicity for cancer immunotherapy. Liu GZ, et al., Abstract 1853, AACR 2021

<sup>2.</sup> Phase 1 Results Demonstrate Highly Differentiated Safety and PK Profile of ADG126, a Masked anti-CTLA-4 SAFEbody® in Patients with Advanced Solid Tumors. Richardson G. et al., Abstract 741P, ESMO, 2022

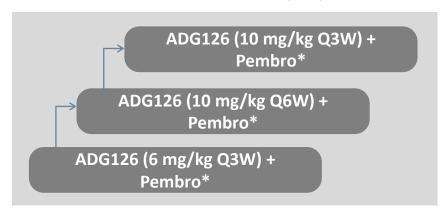
<sup>3.</sup> Interim Results of a Phase 1b/2 Study of ADG126 (a Masked anti-CTLA-4 SAFEbody®) Monotherapy and in Combination with Toripalimab (an anti-PD-1 Antibody) in Patients (pts) with Advanced / Metastatic Solid Tumors. Ariyapperuma M. et al., Abstract CT227, AACR, April 2023

<sup>4.</sup> Initial Results of a Phase 1b/2 Study of ADG126 (a Masked anti-CTLA-4 SAFEbody®) in Combination with Pembrolizumab (an anti-PD-1 Antibody) in Patients with Advanced/ Metastatic Solid Tumors. Daneng Li et al., Abstract CT233, AACR, 2023

### Methods and Study Design Schema

- This is a Phase 1b/2, open-label, multicenter dose escalation (DE) and expansion (EXP) study of ADG126 in combination with Pembrolizumab. Key inclusion criteria are:
- DE Phase: advanced/metastatic solid tumors who have progressed after all standard therapies, or for whom no further standard therapy exists.
- EXP Phase (CRC indication): advanced CRC not amenable to curative surgery, with MSS status, who has received at least 2 and no more than 3 prior systemic therapies, free of liver metastasis and no prior immunotherapy.
- The study design schema for the dose escalation (DE) and dose expansion (EXP) MSS CRC cohorts is shown below:

#### **Dose Escalation (DE)**



#### MSS CRC Dose Expansion (EXP)

ADG126 (10 mg/kg Q3W) + Pembro\* in liver metastasis-free MSS CRC

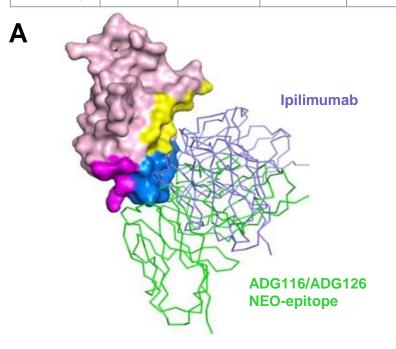
ADG126 (10 mg/kg Q6W) + Pembro\* in liver metastasis-free MSS CRC

\*Pembrolizumab: 200 mg Q3W

- Primary endpoints are safety and tolerability, MTD and RP2D.
- Secondary endpoints are PK, dose proportionality, immunogenicity of both agents and PK/PD relationship, as well as early sign of antitumor activity parameters (ORR, DCR, DOR and PFS) associated with the ADG126/Pembro combination as assessed per RECIST 1.1 and/or iRECIST criteria.

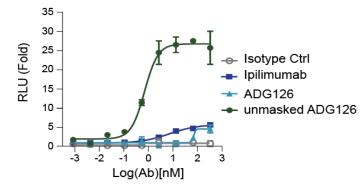
# ADG126 Targets a Distinct Epitope of CTLA-4 Compared to Ipilimumab Resulting in Unique MOAs

KD (nM)	Human	Cyno Monkey	Mouse	Rat
ADG116 (Fully activated ADG126)	2.8	1.2	2.4	1.8

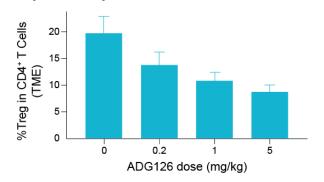


### ADG126 SAFEbody® Masking peptide Protease cleavable linker IgG1 wild-type Masking results in > 2X higher activated ADG126 drug concentration in TME vs blood Enables dose-dependent CTLA-4mediated Treg depletion in TME 20X higher GLP-tox HNSTD over Ipi

B ADCC signaling reporter cell activity triggered by anti-CTLA-4 antibodies



C Dose response of intratumoral Treg depletion upon ADG126 treatment in vivo



**Figure 1. Binding Epitopes and Activities of ADG126 vs. Ipilimumab.** The unique binding epitope of ADG126 and its parental antibody ADG116 with species cross-reactivity (A), results in stronger ADCC activity compared with ipilimumab (B), and dose- dependent intratumoral Treg depletion in vivo in CT26 model by ADG126 anti-CTLA-4 SAFEbody (C).

### Baseline Characteristics of Patients in DE and EXP

- We report results of 46 Pts who participated in study ADG126-P001 (Data cutoff: Nov 30, 2023)
- Three dose levels were evaluated in dose escalation phase (N = 11). The cancer types consisted of ovarian (N=1), colorectal (N=6), pancreatic (N=1), endometrial (n=1), cervical (N=1) and neuroendocrine tumor (N=1).
- Two dose schedules of ADG126 10 mg/kg were evaluated in dose expansion phase (N = 35). The tumor types are advanced MSS CRC (free of liver metastasis; N = 24) and other cancer types (I/O naïve and experienced; N=11).
- Majority of Pts (74.5%) have what are generally considered immunologically "cold" tumors.
- The baseline characteristics of the patients reported here are summarized in Table 1 (Right).
- The median follow-ups (month) for DE and EXP patients included in this report are 10.9 (8.6-NR) and 6.7 (4.6-NR), respectively.

**Table 1. Baseline Characteristics** 

Characteristics	N=46		
Dose Escalation (# of pts)	11		
Dose Expansion (# of Pts)	35		
Age (Years), Median (Range)	60 (26-75)		
Female, n (%)	21 (46%)		
Race, n (%)			
Caucasian, n (%)	19 (41%)		
Asian, n (%)	23 (50%)		
Black or African American, n (%)	1 (2%)		
Other, n (%)	3 (7%)		
ECOG, n (%)			
0	20 (43%)		
1	26 (56%)		
Prior treatment regimens ≥3	17 (37%)		
Prior immunotherapy, n (%)	6 (13%)		

### Clinical Safety (TRAEs, N = 46)

- Highly manageable safety and tolerability profile; no dose-limiting toxicities.
- Most TRAEs are G1 and G2, with no G4/5 TRAEs. A total of 5 Pts developed Grade 3 TRAEs (10.8%).
- Three Pts with TRAEs (G2 pneumonitis, G3 pancreatitis and G2 Diarrhea) led to study discontinuation (6.5%).
- Twelve Pts developed SAEs and 5 are treatment related, which are diarrhea (G2), secondary adrenocortical insufficiency, pancreatitis, asthenia and type 1 diabetes mellitus and hyperglycemia (G3).

Table 2. TRAEs By Grade and Dose Level

ADG126 Dose Level	N	All Grades (%)	G1 (%)	G2 (%)	G3 (%)	G4-5 (%)	Discont. Rate
6 mg/kg Q3W	5	3 (60%)	1 (20%)	1 (20%)	1 (20%)	0	20%
10 mg/kg Q6W	17	12 (71%)	3 (18%)	8 (47%)	1 (6%)	0	0
10 mg/kg Q3W	24	16 (67%)	5 (21%)	8 (33%)	3 (13%)	0	8%

### Clinical Safety (TRAEs, N = 46)

Fig 2A. ADG126 6 mg/kg Q3W (N = 5)

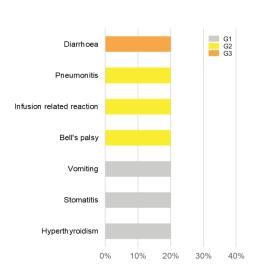
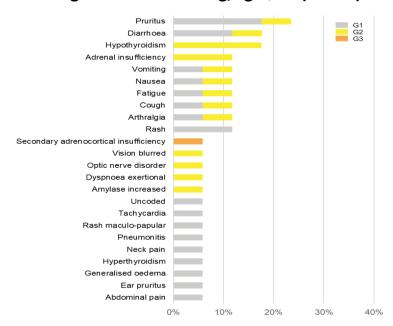
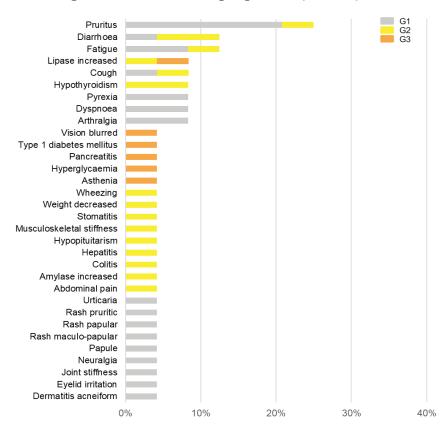


Fig 2B. ADG126 10 mg/kg Q6W (N = 17)



**Figure 2.** TRAEs in 46 pts in dose escalation and expansion cohorts across three dose levels/schedule of ADG126. Pembrolizumab was dosed at 200mg, Q3W throughout.

Fig 2C. ADG126 10 mg/kg Q3W (N = 24)



### Clinical Activity of Evaluable Patients

Fig 3A. Dose Escalation Cohort (N = 11)

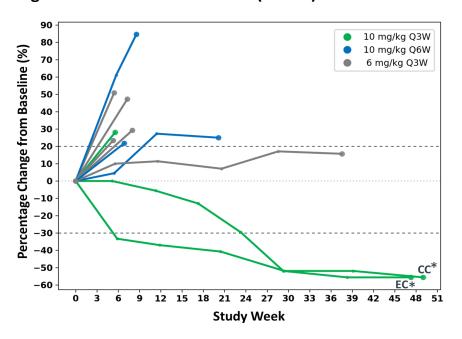


Fig 3B. Dose Escalation and Dose Expansion Cohorts (N = 43)

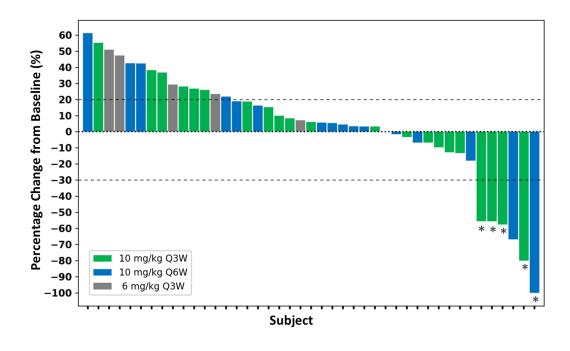


Figure 3.

A, Spider plot of 11 Pts in dose escalation cohort. The 10 mg/kg Q3W ADG126/Pembro combination therapy resulted in 2 confirmed and durable PRs (1 EC and 1 CC who progressed on prior anti-PD-1).

**B,** Waterfall plot of all 43 efficacy evaluable patients from both dose escalation and expansion cohorts (multiple cancer types). A total of 5 confirmed PRs were observed. \* PR: partial response; CC: cervical cancer; EC: Endometrial cancer.

# Clinical Efficacy of Patients with MSS CRC (Free of Liver Mets) in Dose Expansion

**Table 3. MSS CRC Patients Baseline Characteristics** 

CRC Patients Characteristics	N=24	
Age (Years; median range)	60 (41-75)	
Female, n (%)	12 (50%)	
Race, n (%)		
Caucasian, n (%)	9 (38%)	
Asian, n (%)	15 (62%)	
Other	-	
ECOG, n (%)		
0	9 (38%)	
1	15 (62%)	
With peritoneal metastasis, n (%)	8 (33%)	
Prior Treatment ≥3	10 (42%)	
Prior immunotherapy, n (%)	0	

Table 4. Summary of Response Rate of Evaluable MSS CRC Pts (10 mg/kg Q3W)

Response Rate of MSS CRC				
ADG126 Dose and subset (N)	<b>10mpk Q3W</b> (12)	10mpk Q3W w/o peritoneal metastasis (9)		
Confirmed ORR, % (95% CI)	<b>17</b> (2-48)	<b>22</b> (3-60)		
BoR, N (%)				
PR	<b>2</b> (17)	<b>2</b> (22)		
SD	<b>7</b> (58)	<b>7</b> (78)		
DCR (CR+PR+SD), % (95% CI)	<b>75</b> (43-95)	<b>100</b> (66-100)		

cPR: confirmed partial response. PFS: Progression-free survival. BoR: Best of Response. DCR: Disease control

rate. NR: Not reached

# Clinical Efficacy of Patients with MSS CRC (Free of Liver Mets) in Dose Expansion

Fig 4A. Duration of Treatment of MSS CRC Pts by 10mg/kg Q3W and Q6W of ADG126/pembrolizumab

(N=22 efficacy evaluable pts with at least one CT scan)

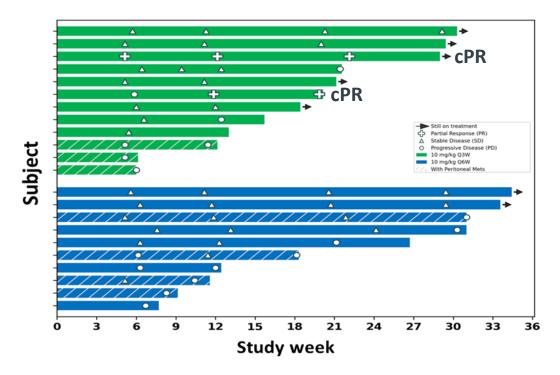
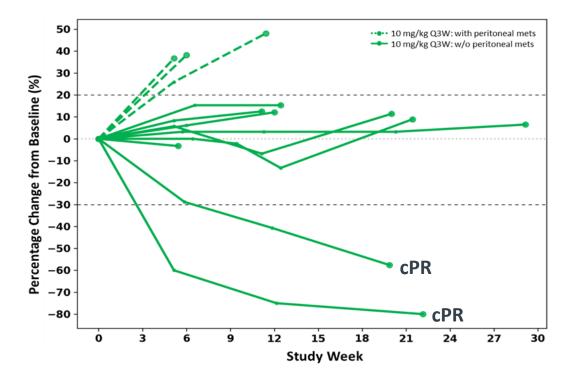


Fig 4B. Spider plot of evaluable MSS CRC Pts treated by 10 mg/kg Q3W ADG126/Pembrolizumab (N = 12)



# Case Study: ADG126 10 mpk Q3W + Pembro 3L MSS CRC Patient: Confirmed PR and Reduced Liver Lesions

#### **Tumor Type:**

Female, 66 years old

Advanced rectal adenocarcinoma stage IV with lung metastasis

KRAS WT, BRAF normal, MSS, TMB 11.07muts/mb

#### **Prior Therapies:**

Previously received 2 lines of therapies:

- FOLFIRI + Vectibix
- Clinical trial G1290 with Rivoceranib + SOC lonsurf

#### **Dose Regimen:**

ADG126 10 mg/kg Q3W + Pembro 200 mg Q3W (5 cycles)

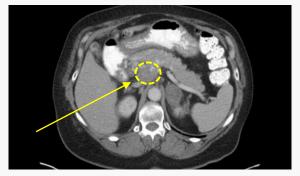
ADAGENE

# Case Study Continued: ADG126 10 mpk Q3W + Pembro 3L MSS CRC Patient: Confirmed PR and Reduced Liver Lesions

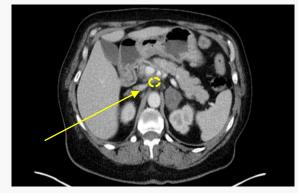
	Lesion #	Location	Baseline	Week 6	Week 12	Week 21
	TL#1	Right lung	14 mm	10	8	8
Target lesion	TL#2	Right lung	8 mm	8	6	0
Target lesion	TL#3	Lymph node	22 mm	14	13	9
(mm)	TL#4	Lymph node	15 mm	10	8	8
	Total		59 mm	42 (-29%)	35 (-41%)	25 (-58%)
Non target lesions			Present	Present	Present	Present
	#1	Liver		16	8	0
New lesion	#2	Liver		12	7	6
(mm)	#3	Other		9	3	0
	Total			37	18 (-51%)	6 (-84%)
Overall response				uPD	PR	PR

\*Based on iRECIST assessment

## The treatment-induced change in the perihepatic lymph node



May 15, 2023 (Baseline)

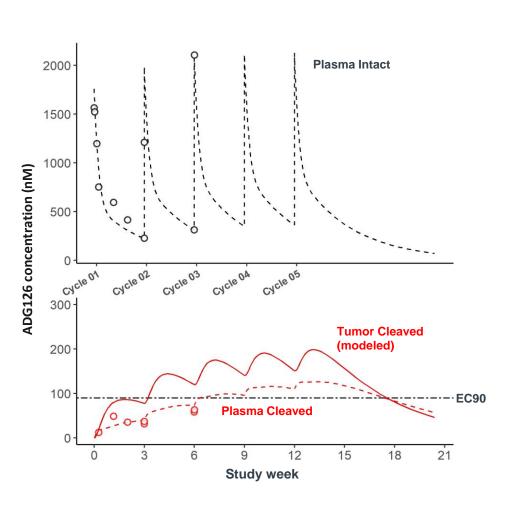


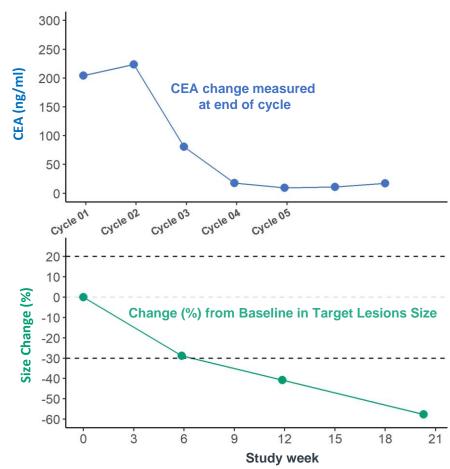
Oct 16, 2023 (week 21)

Courtesy of Dr Tammy Lamb, Florida Cancer Specialists

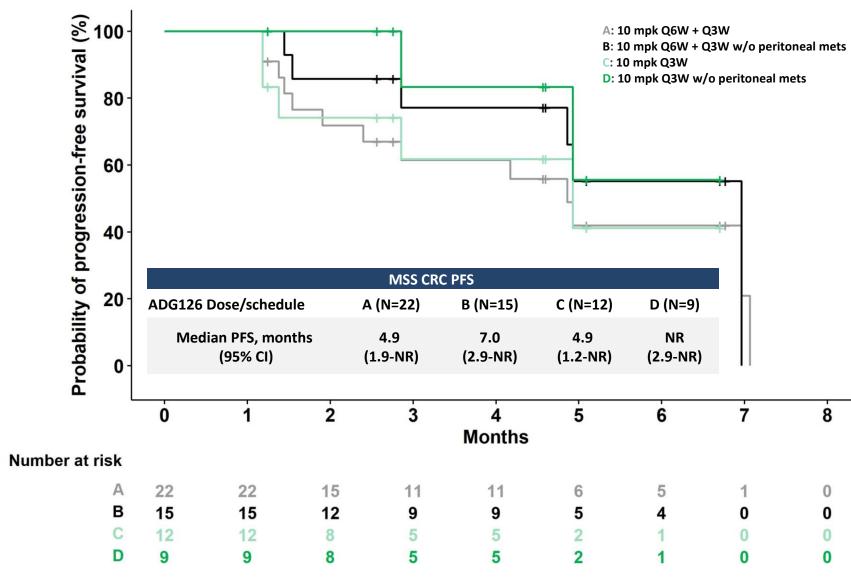
### Case Study Continued- CEA Decrease and Tumor Accumulation Over Time

#### ADG126 10 mg/kg Q3W plus Pembro





# PFS Analysis of the Evaluable Subjects from ADG126/Pembro Combo Dose Expansion: MSS CRC Free of Liver Metastasis



### Conclusions

- The masked anti-CTLA-4 SAFEbody ADG126 (muzastotug) is designed to widen the therapeutic index by targeting a unique epitope of CTLA-4, precision masking for enhanced intra-tumoral Treg depletion.
- ADG126 administered at up to 10 mg/kg Q3W with repeat dosing in combination with pembrolizumab is well tolerated with 13% G3 TRAEs, 8% discontinuation rate and no G4/5 TRAEs or DLT.
- In dose escalation, 2 confirmed PR were observed among 3 subjects treated with 10 mg/kg Q3W ADG126/Pembro, which triggered dose expansion at this dose level.
- In dose expansion, 10 mg/kg Q3W ADG126/Pembro treatment in 12 subjects with MSS CRC resulted in 2 confirmed PR, and reduction of new liver lesions. This triggered further expansion into Stage 2 of the Simon's 2-stage design at this dose level.
- The favorable safety profile of ADG126/Pembro allows for continued treatment with repeated dosing, resulting in a long PFS (≥ 7 mons), especially in MSS CRC patients without liver and peritoneal metastasis.
- These promising data support further evaluation of this potential best-in-class anti-CTLA-4 antibody
  ADG126 (muzastotug) in combination with pembrolizumab in MSS CRC.