



# ADG126 SAFEbody<sup>®</sup> ESMO 2024 Data Presentation

September 2024

**ADAGENE**

# Increased Therapeutic Index of Muzastotug (ADG126), a Masked Anti-CTLA-4 Antibody, in Combination with Pembrolizumab (Pembro) Enables Significant Clinical Benefits and Supports Further Clinical Development in Patients with Metastatic MSS CRC

Daneng Li<sup>1\*</sup>, Sun Yong Kim<sup>2\*</sup>, Hee Kyung Kim<sup>3</sup>, Sunil Sharma<sup>4</sup>, Sang Joon Shin<sup>5</sup>, Jeeyun Lee<sup>6</sup>, Seock-Ah Im<sup>7</sup>, Kristine She<sup>8</sup>, Yan Li<sup>8</sup>, Luke Chung<sup>8</sup>, Ping Xiao<sup>8</sup>, Guizhong Liu<sup>8</sup>, Songmao Zheng<sup>8</sup>, Dana Hu-Lowe<sup>8</sup>, Stanley Frankel<sup>8</sup>, Michael Chisamore<sup>9</sup>, Peter Luo<sup>8</sup>, Jiping Zha<sup>8</sup> and Manish R. Patel<sup>10</sup>

1. City of Hope Comprehensive Cancer Center, Los Angeles, USA; 2. Asan Medical Center, University of Ulsan College of Medicine, Republic of Korea; 3. Chungbuk National University Hospital, Republic of Korea; 4. Honor Health Research Institute, AZ, USA; 5. Yonsei Cancer Center & University Health System, Republic of Korea; 6. Samsung Medical Center, Republic of Korea; 7. Seoul National University Hospital, Republic of Korea; 8. Adagene Inc., San Diego, CA USA; 9. Merck & Co., Inc., Rahway, NJ, USA; 10. Florida Cancer Specialists/Sarah Cannon Research Institute, USA. \* Presenting author

## Background

Muzastotug (ADG126) is a fully human anti-CTLA-4 IgG1 monoclonal antibody with cleavable masking peptides that is preferentially activated in the tumor microenvironment; it binds to a unique CTLA-4 epitope to prime T cells and deplete Tregs<sup>1</sup>. Previously we presented early and partial clinical data from Phase 1b/2 study ADG126-P001 (NCT05405595) including the safety profile and clinical activities of ADG126 (up to 10 mg/kg, Q3W) + pembrolizumab (200 mg, Q3W).<sup>1</sup>

Here we further update the safety and activity results of the study. Specifically,

- Safety profile of 66 patients (Pts) in dose escalation (DE) and dose expansion (EXP) treated by ADG126 + pembrolizumab (IO doublet).
- Clinical activities from ADG126 (10 mg/kg Q3W and Q6W) + pembrolizumab for 34 efficacy-evaluable (EE) MSS CRC Pts without liver metastasis (NLM) or without both liver and peritoneal metastasis (NLPM).
- Exposure-Response (E-R) analysis and mPBPK modeling to inform the optimal dose levels and regimen of ADG126 for future clinical evaluation.

1. Daneng Li et al., Abstract#43456, ASCO GI Conference, 2024

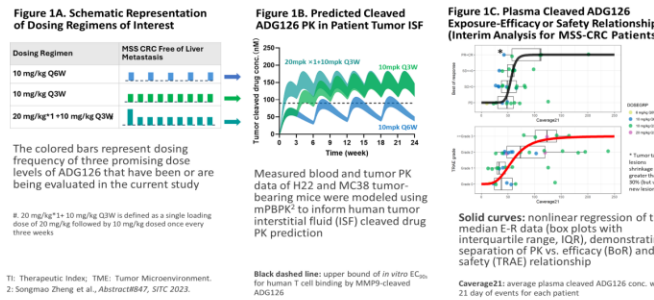
## Methods and Study Design Schema

This is a Phase 1b/2, open-label, multicenter dose escalation and expansion combination study of ADG126 + Pembrolizumab (200 mg, Q3W) in advanced solid tumors. The study design schema for the dose escalation (DE) and dose expansion (EXP) MSS CRC cohorts is shown below:



- The primary endpoints are safety and tolerability, MTD and RP2D.
- The 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, PFS and OS) associated with the ADG126/Pembro combination as assessed per RECIST 1.1 and/or iRECIST criteria.

## SAFEbody® Technology Enables an Enhanced Therapeutic Index of ADG126 Plus Pembro IO Doublet and Increased Cleavage of ADG126 in TME



1. Therapeutic Index, TME, Tumor Microenvironment.  
2. Songmao Zheng et al., Abstract#47, SITC 2023.

## Baseline Characteristics of Patients in DE and EXP

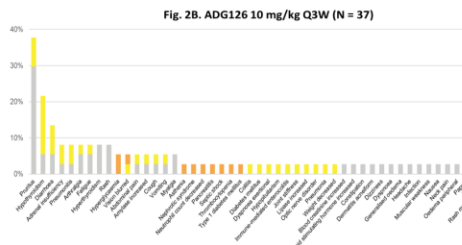
Characteristics	N=66
Dose Escalation (# of Pts)	17
Dose Expansion (# of Pts)	49
Age (Years), Median (Range)	59.5 (26-75)
Female, n (%)	31 (47%)
Race, n (%)	
Asian, n (%)	36 (55%)
White/Caucasian, n (%)	26 (39%)
Black or African American, n (%)	1 (2%)
Other, n (%)	3 (5%)
ECOG Q1, n (%)	28 (42%) / 38 (58%)
Prior treatment regimens ≥3	21 (32%)
Prior immunotherapy, n (%)	5 (8%)

- We report results of 66 Pts in study ADG126-P001, 64 were efficacy evaluable. (Data cutoff: July 30, 2024)
- In DE (N=17), the tumor types consisted of the ovarian, colorectal, pancreatic, endometrial, cervical, neuroendocrine, anal squamous cell carcinoma and hepatocellular carcinoma.
- In EXP (partial, N=49), the tumor types are advanced MSS CRC (free of liver metastasis, n=37) and other cancer types (I/O naive and experienced; n=12).
- A majority of Pts (75.8%) have what are generally considered immunologically "cold" tumors.
- The baseline characteristics of the patients reported here are summarized in Table 1.

## Clinical Safety of Patients (TRAEs, N = 66)

- No dose-limiting toxicities (DLT) or G4/5 TRAEs up to 20 mg/kg Q3W.
- For 10 mg/kg Q3W, only 16% G3 TRAEs (6/37) was observed with an average follow up of 9.7 months, indicating a safe and manageable safety profile.
- In 20 mg/kg Q3W DE cohort, the initial cycle was tolerable, but two consecutive doses resulted in multiple G2/G3 TRAEs (50%, 3/6), and 75% (3/4) for the MSS CRC patients (Figure 2C), indicating that safety ceiling may be reached.
- Seventeen patients developed SAEs (7 are treatment related), however discontinuation rate remains low (8%, 5/66), Table 2).

Dose levels (mg/kg)	N	All G n (%)	G1 n (%)	G2 n (%)	G3 n (%)	Discont. Rate
All	66	49 (74)	14 (21)	26 (39)	9 (14)	5 (8%)
6 mg/kg Q6W	1	0	0	0	0	
6 mg/kg Q3W	5	3 (60)	1 (20)	1 (20)	1 (20)	1 (20%)
10 mg/kg Q6W	17	12 (71)	3 (18)	8 (47)	1 (6)	1 (6%)
10 mg/kg Q3W	37	30 (81)	9 (24)	15 (41)	6 (16)	3 (8%)
20 mg/kg Q3W	6	4 (67)	1 (17)	2 (33)	1 (17)	0



- Developed mPBPK model can characterize measured plasma intact (not shown) and cleaved PK simultaneously well across dosing regimens.
- 10 mg/kg Q6W resulted in population mean steady-state (SS) maximum plasma cleaved conc. (C<sub>max,plasma,cleaved</sub>) ~60 nM (e.g., identified as median conc. for SD with target lesion size smaller than baseline post treatment and 25% IQR for PR (Figure 1C)), and is significantly lower than ~125 nM (e.g., identified as median conc. for G3 TRAE in < 20% of all patients). This is consistent with the safety profile comparing 10 mg/kg Q6W vs 10 mg/kg Q3W.
- 10 mg/kg Q3W resulted in mean C<sub>max,plasma,cleaved</sub> ~125 nM, >2X higher than that associated with SD (median) / PR (25% IQR) and is slightly higher than the median conc. for PR, supporting higher observed ORR for 10 mg/kg Q3W vs 10 mg/kg Q6W.
- A 20 mg/kg single loading dose followed by 10 mg/kg Q3W can approach the target efficacious conc. rapidly within TME (e.g., C1, Figure 1B) and in plasma (e.g., C1-2), compared with 10 mg/kg Q3W (e.g., C2-3), potentially boosting efficacy without adding significant safety risk vs 10 mg/kg Q3W.
- 20 mg/kg Q3W resulted in mean C<sub>max,plasma,cleaved</sub> approaching median conc. for G3 TRAE in C2, and significantly higher at C3 and onwards, consistent with clinical safety findings for 20 mg/kg Q3W DE cohort for MSS CRC patients.

## mPBPK Modeling + E-R Analysis to Inform on Optimal ADG126 Dose Selection of IO Doublet

Figure 3. Minimal Physiologically-based Pharmacokinetic (mPBPK) Modeling of Measured Plasma Cleaved Interim PK Data of ADG126 (A, C, E, F) and Corresponding Safety Profile over Time at Two Dose Levels (B and D)

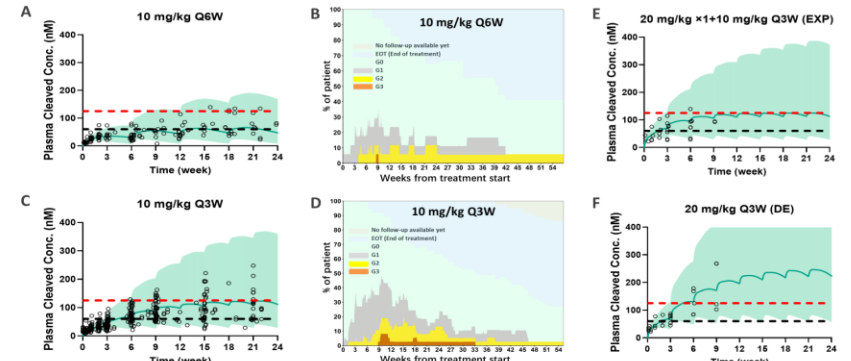
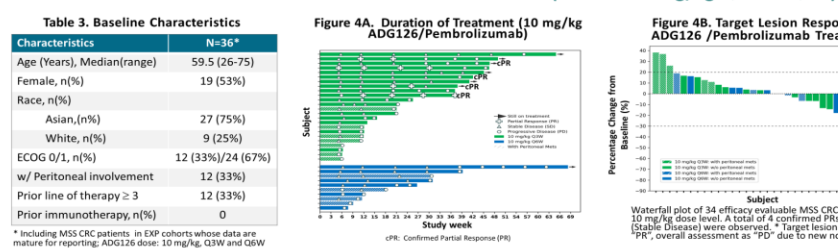


Figure 2. Frequency of TRAEs in 60 pts in dose escalation and expansion cohorts across 3 dose levels/schedule of ADG126. Pembrolizumab was dosed at 200mg, Q3W throughout.

## MSS CRC Patients Characteristics and Clinical Activities (ADG126 10 mg/kg Q6W & Q3W)



\* Including MSS CRC patients in EXP cohorts whose data are mature for reporting; ADG126 dose: 10 mg/kg, Q3W and Q6W

## Table 4. Summary of Efficacy Data (ADG126 10 mg/kg Q3W and Q6W)

ADG126 Dose and Subpopulation (N)	10 mg/kg Q6W		10 mg/kg Q3W	
	All (N = 10)	NLPM (6)	All* (24)	NLPM (17)
ORR, % (95% CI)	0†	0 (0-46)	17 (71)	24 (70)
BoR, N (%)	0	0	4 (17)	4 (24)
PR**	0	0	4 (17)	4 (24)
SD	7 (70)	4 (67)	14 (58)	11 (65)
DCR (CR+PR+SD), % (95% CI)	70 (35-93)	67 (22-96)	75 (53-90)	88 (64-99)
6-month CBR, % (95% CI)	20 (3-56)	33 (4-78)	33 (16-55)	47 (23-72)
Median PFS, months (95% CI)	4.5 (1.4-7.1)	5.9 (1.4-NA)	4.7 (2.6-8.5)	8.5 (2.9-9.2)
Median Duration of Drug Exposure (Days) of ADG126	88.5	108.5	127	223

\* All: all evaluable NLM MSS CRC patients regardless of peritoneal metastasis status. \*\* See Figure 4B & SA.

## Table 5. Landmark Overall Survival Data (10 mg/kg Q6W and Q3W)

ADG126 / Pembrolizumab	N	6-month OS% (95% CI)	9-month OS% (95% CI)	12-month OS% (95% CI)	Median follow-up (95% CI)
All MSS CRC (NLM)	36	91 (76-97)	86 (69-94)	74 (55-86)	12.2 (10.4-13.6)
Patients w. ≥4 Cycles of Treatment (NLM)	21	100 (NA-NA)	95 (70-99)	89 (61-97)	11.6 (9.5-12.7)
Patients w/o. Peritoneal Metastasis (NLPM)	24	92 (71-98)	87 (66-96)	82 (60-93)	12.7 (10.7-14.9)

ORR: overall response rate; BoR: Best of Response; CBR: clinical best response; DCR: Disease control rate; PR: Partial response (confirmed); SD: stable disease. Data cutoff date: July 30, 2024

## Conclusions

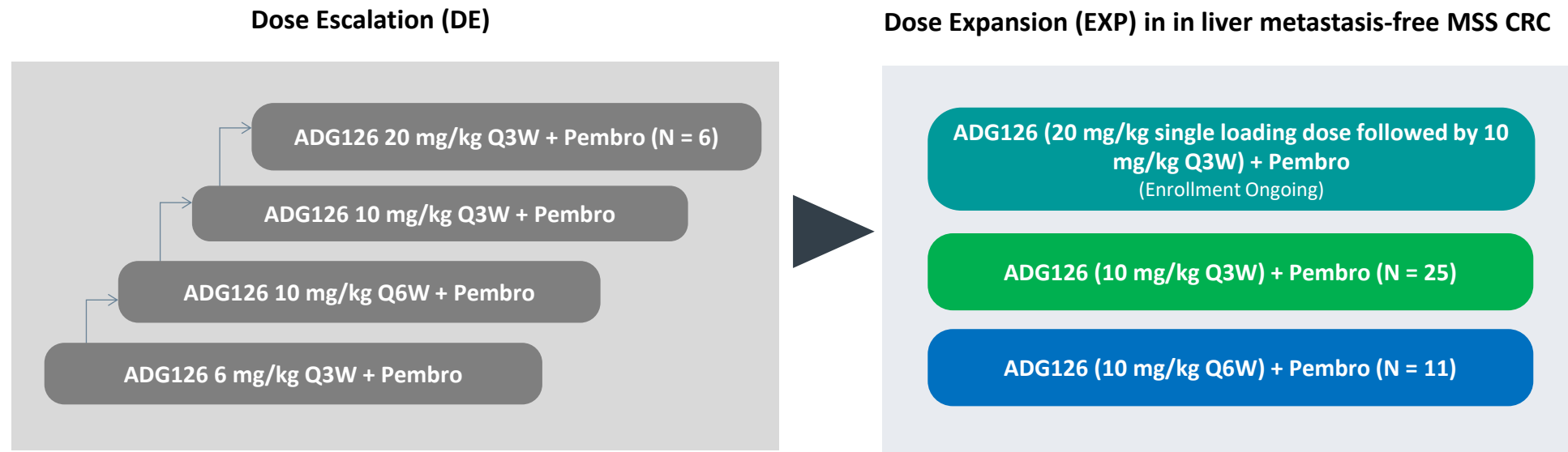
- Muzastotug (ADG126) administered at 10 mg/kg Q6W and Q3W demonstrated a well-tolerated safety profile and encouraging clinical efficacy compared with historical benchmarks for 3L MSS CRC.
- ADG126 10 mg/kg Q3W/Pembro showed a manageable G3 TRAEs (16%) and 8% discontinuation rate with no G4/5 TRAEs and no DLT; less frequent dosing (Q6W) showed an even better tolerated safety profile while maintaining OS.
- Dose-dependent efficacy was observed between ADG126 10 mg/kg Q3W/Pembro and Q6W/Pembro. The former resulted in 4 confirmed PRs in MSS CRC (n=24), fulfilling success criteria of Simon's 2-stage design.
- A 24% ORR and 8.5-month mPFS were observed for NLPM MSS CRC patients treated with ADG126 10 mg/kg Q3W. The results from this larger sample size (N=17) reproduced the earlier data.<sup>1</sup>
- The 12-month OS rates are 74% and 82% for NLM and NLPM MSS CRC, respectively, in combined cohorts of ADG126 10 mg/kg Q3W/Pembro and Q6W/Pembro.
- The totality of the data suggest that ADG126 could be a potential best-in-class anti-CTLA-4 agent in combination with anti-PD-1 therapy. The 20 mg/kg dose level is being evaluated as a loading dose as its initial cycle was generally well-tolerated.
- The overall performance and therapeutic index of ADG126 at 10 mg/kg Q3W/Q6W in combination with pembrolizumab supports that this IO combination regimen may be suited for combination with other standard of care agents to further enhance clinical impact on a broader patient population.



# ESMO 2024 Poster

## Methods and Study Design Schema

This is a Phase 1b/2, open-label, multicenter dose escalation and expansion combination study of ADG126 + Pembrolizumab (200 mg, Q3W) in advanced solid tumors. The study design schema for the dose escalation (DE) and dose expansion (EXP) MSS CRC cohorts is shown below:



- The primary endpoints are safety and tolerability, MTD and RP2D.
- The 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, PFS and OS) associated with the ADG126/Pembro combination as assessed per RECIST 1.1 and/or iRECIST criteria.

# ESMO 2024 Poster

## SAFEbody® Technology Enables an Enhanced Therapeutic Index of ADG126 Plus Pembro IO Doublet and Increased Cleavage of ADG126 in TME

Figure 1A. Schematic Representation of Dosing Regimens of Interest

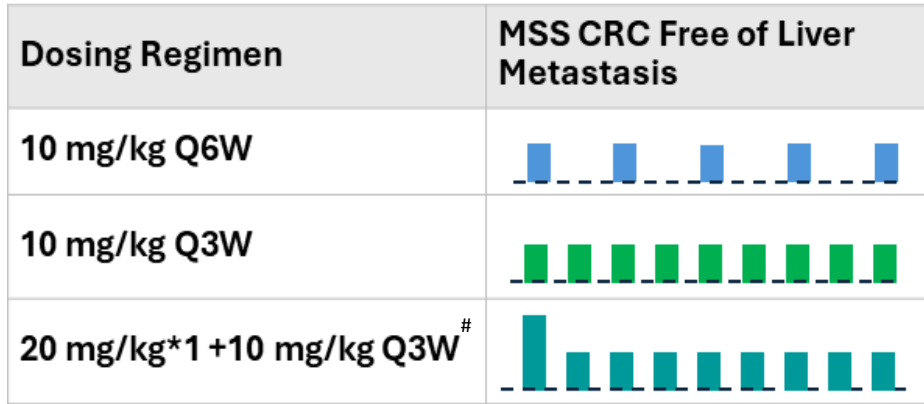


Figure 1B. Predicted Cleaved ADG126 PK in Patient Tumor ISF

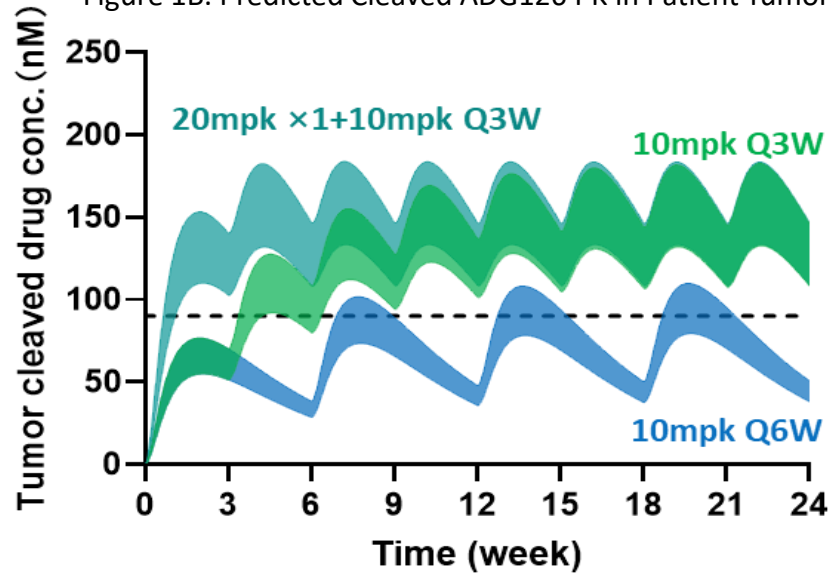
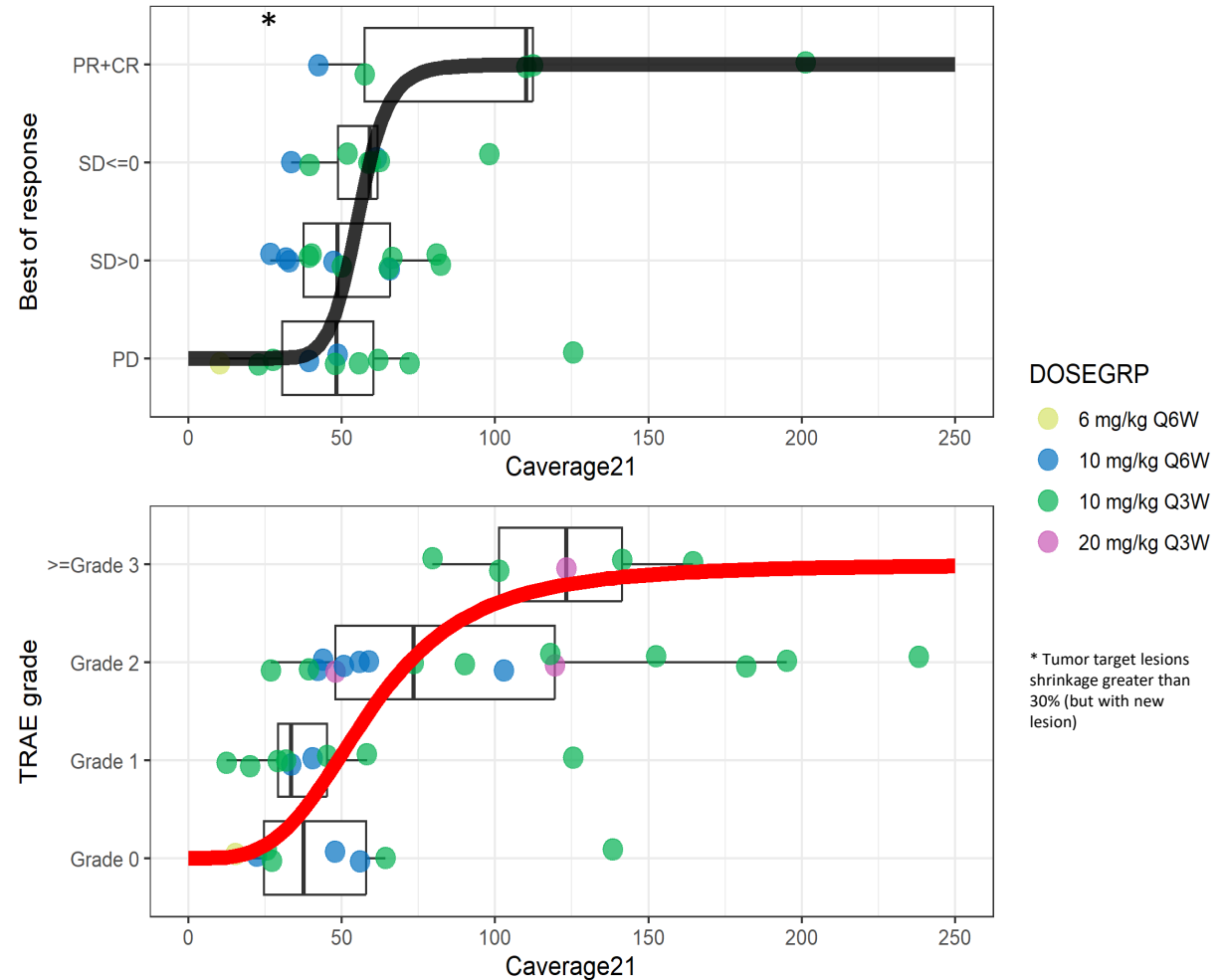
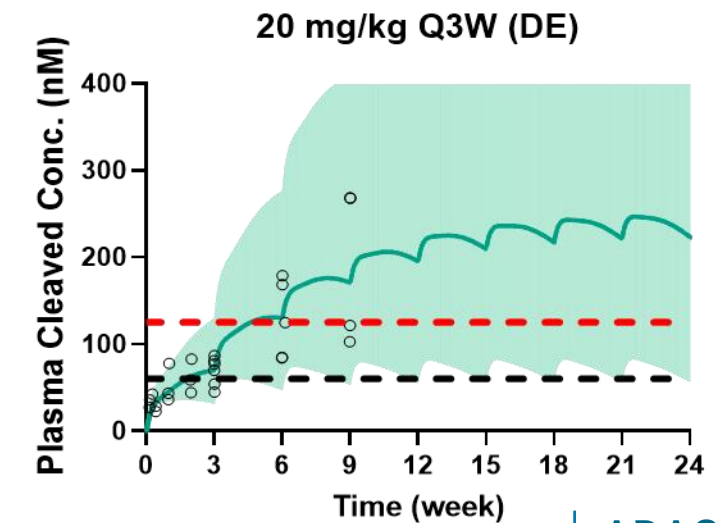
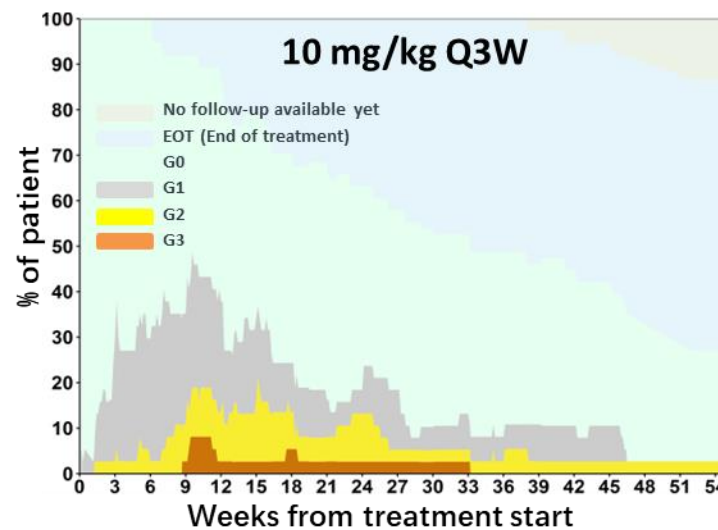
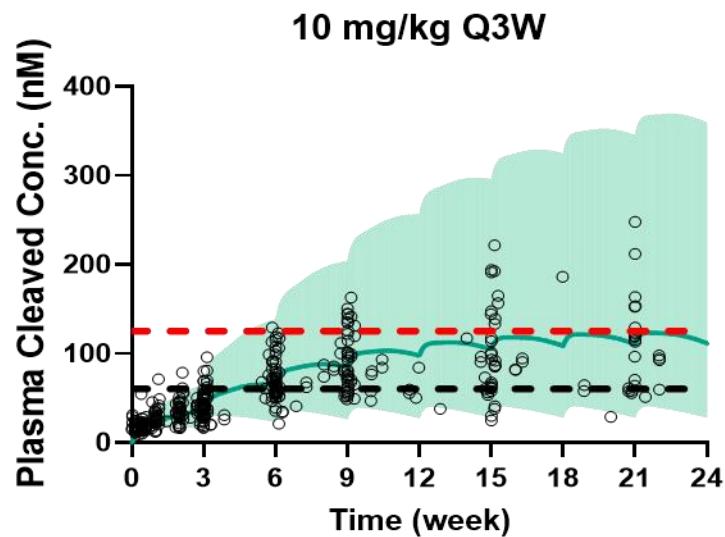
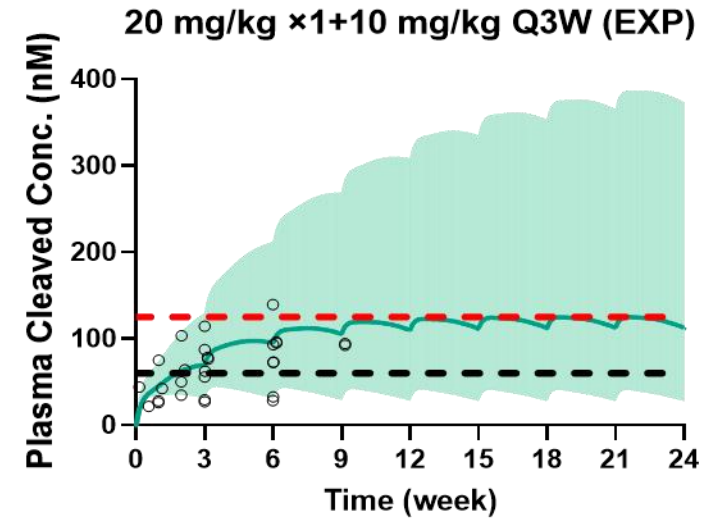
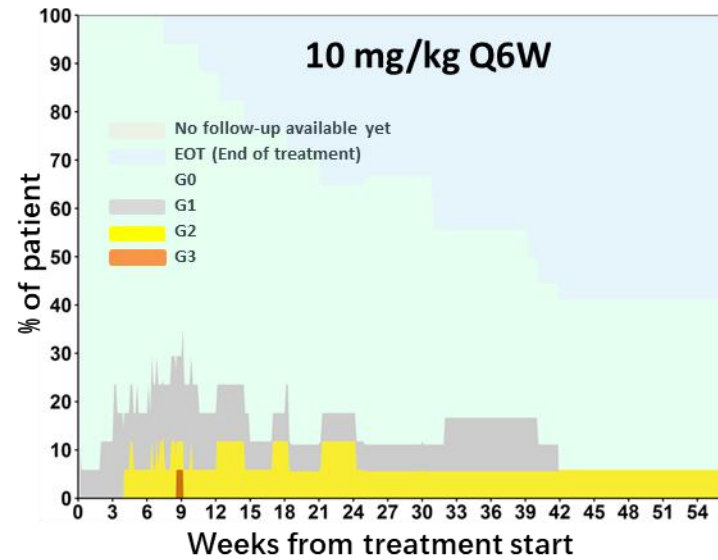
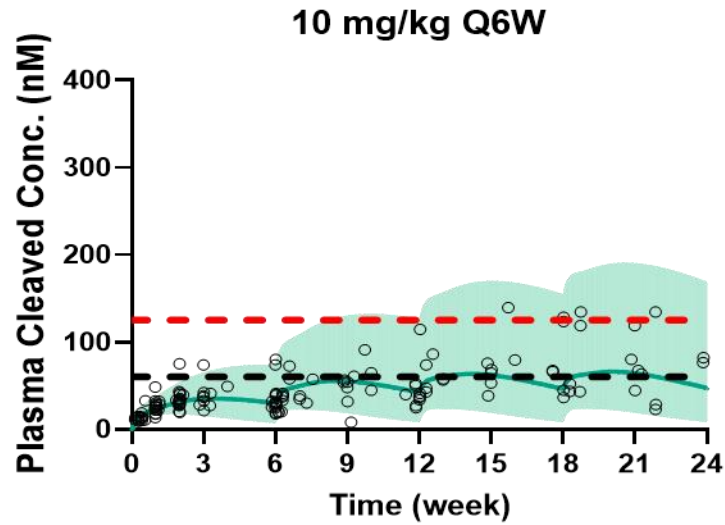


Figure 1C. Plasma Cleaved ADG126 Exposure-Efficacy or Safety Relationship (Interim Analysis for MSS-CRC Patients)



# ESMO 2024 Poster

## mPBPK Modeling + E-R Analysis to Inform on Optimal ADG126 Dose Selection of IO Doublet

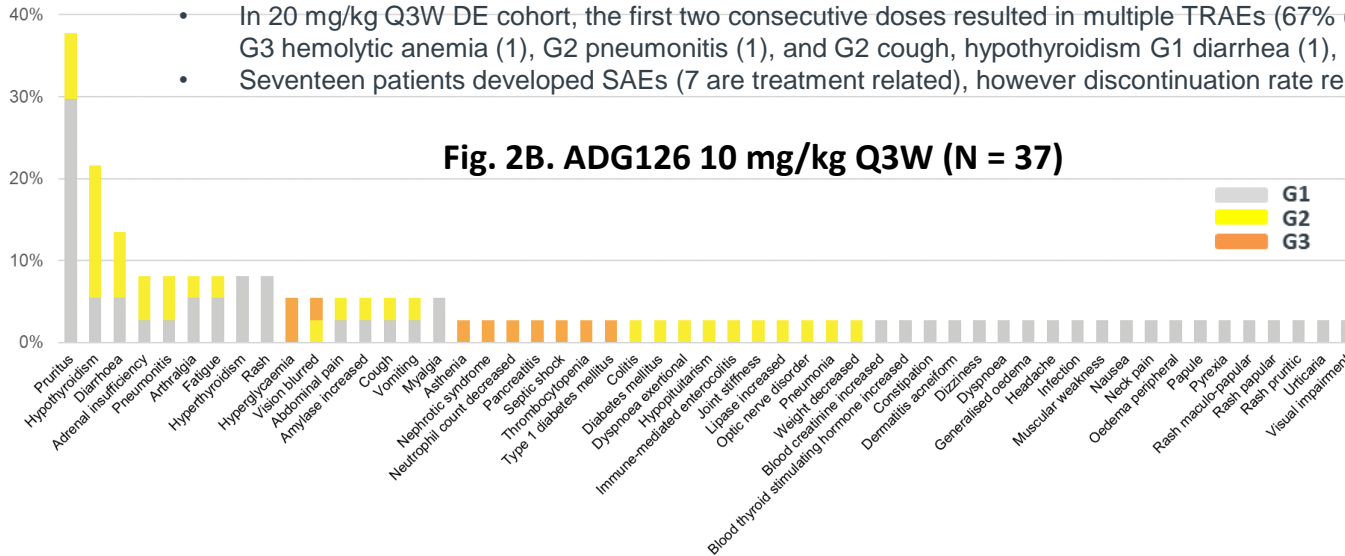


# ESMO 2024 Poster

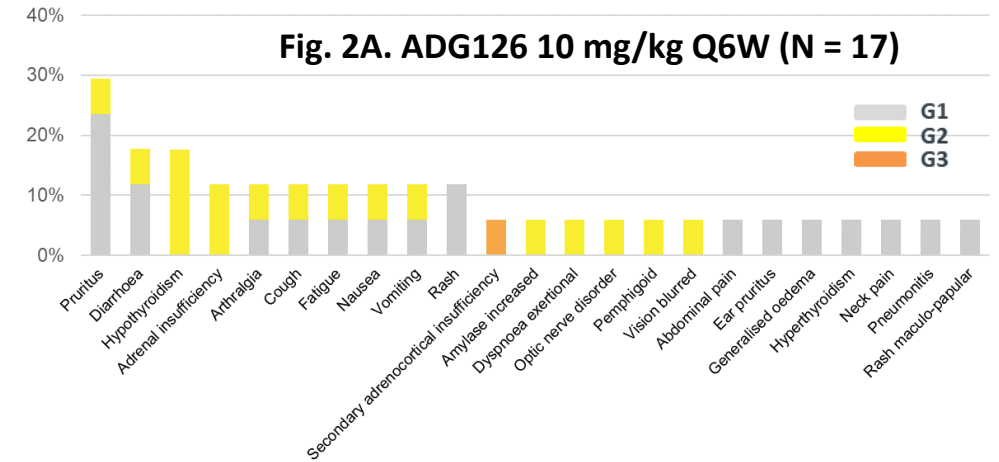
## Frequency of TRAEs of ADG126/Pembro Combo (N=66)

- No dose-limiting toxicities (DLT) or G4/5 TRAEs up to 20 mg/kg Q3W
- For 10 mg/kg Q3W, only 16% G3 TRAEs (6/37) with average follow up of 9.7 months, indicating highly manageable safety and tolerability profile.
- In 20 mg/kg Q3W DE cohort, the first two consecutive doses resulted in multiple TRAEs (67% (4/6), and 75% (3/4) for MSS CRC patients), consisting of G3 hemolytic anemia (1), G2 pneumonitis (1), and G2 cough, hypothyroidism G1 diarrhea (1), indicating that safety ceiling has been reached.
- Seventeen patients developed SAEs (7 are treatment related), however discontinuation rate remains low (8% (5/66)).

**Fig. 2B. ADG126 10 mg/kg Q3W (N = 37)**



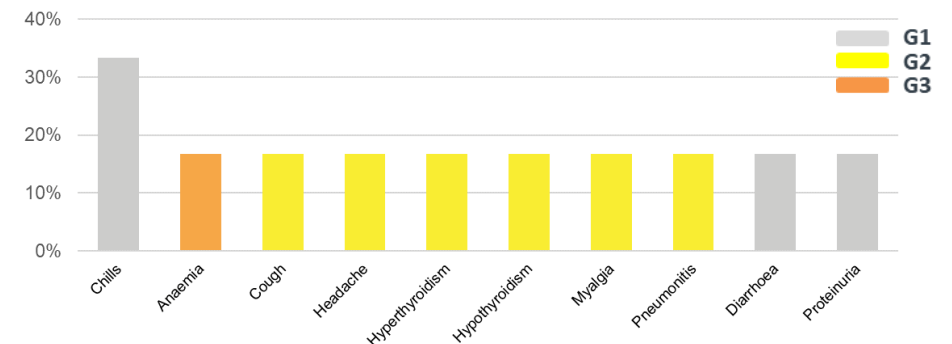
**Fig. 2A. ADG126 10 mg/kg Q6W (N = 17)**



**Table 2. TRAEs By Grade and Dose Level (N = 66)**

Dose levels (mg/kg)	N	All G n (%)	G1 n (%)	G2 n (%)	G3 n (%)	G4 n (%)	G5 n (%)	Discont. Rate
All	66	49 (74)	14 (21)	26 (39)	9 (14)	0	0	5 (8%)
6 mg/kg Q3W	5	3 (60)	1 (20)	1 (20)	1 (20)	0	0	1 (20%)
6 mg/kg Q6W	1	0	0	0	0	0	0	0
10 mg/kg Q6W	17	12 (71)	3 (18)	8 (47)	1 (6)	0	0	1 (6%)
10 mg/kg Q3W	37	30 (81)	9 (24)	15 (41)	6 (16)	0	0	3 (8%)
20 mg/kg Q3W	6	4 (67)	1 (17)	2 (33)	1 (17)	0	0	0

**Fig. 2C. ADG126 20 mg/kg Q3W (N = 6)**



# ESMO 2024 Poster

Table 4. Summary of Efficacy Data (ADG126 10 mg/kg Q3W and Q6W)

ADG126 Dose and Subpopulation (N)	10 mg/kg Q6W		10 mg/kg Q3W	
	All ( N = 10)	NLPM (6)	All* (24)	NLPM (17)
<b>ORR, % (95% CI)</b>	0* (0-31)	0* (0-46)	17 (5-37)	24 (7-50)
<b>BoR, N (%)</b>				
PR**	0	0	4 (17)	4 (24)
SD	7 (70)	4 (67)	14 (58)	11 (65)
<b>DCR (CR+PR+SD), % (95% CI)</b>	70 (35-93)	67 (22-96)	75 (53-90)	88 (64-99)
<b>6-month CBR, % (95% CI)</b>	20 (3-56)	33 (4-78)	33 (16-55)	47 (23-72)
<b>Median PFS, months (95%CI)</b>	4.5 (1.4-7.1)	5.9 (1.4-NA)	4.7 (2.6-8.5)	8.5 (2.9-9.2)
<b>Median Duration of Drug Exposure (Days) of ADG126</b>	88.5	108.5	127	223

\*: All: all evaluable NLM MSS CRC patients regardless of peritoneal metastasis status; \*See Figure 4B & 5A.

ORR: overall response rate; BoR: Best of Response. CBR: clinical best response; DCR: Disease control rate. PR: Partial response (confirmed); SD: stable disease. Data cutoff date: July 30, 2024

# ESMO 2024 Poster

Table 5. Landmark Overall Survival Data (10 mg/kg Q6W and Q3W)

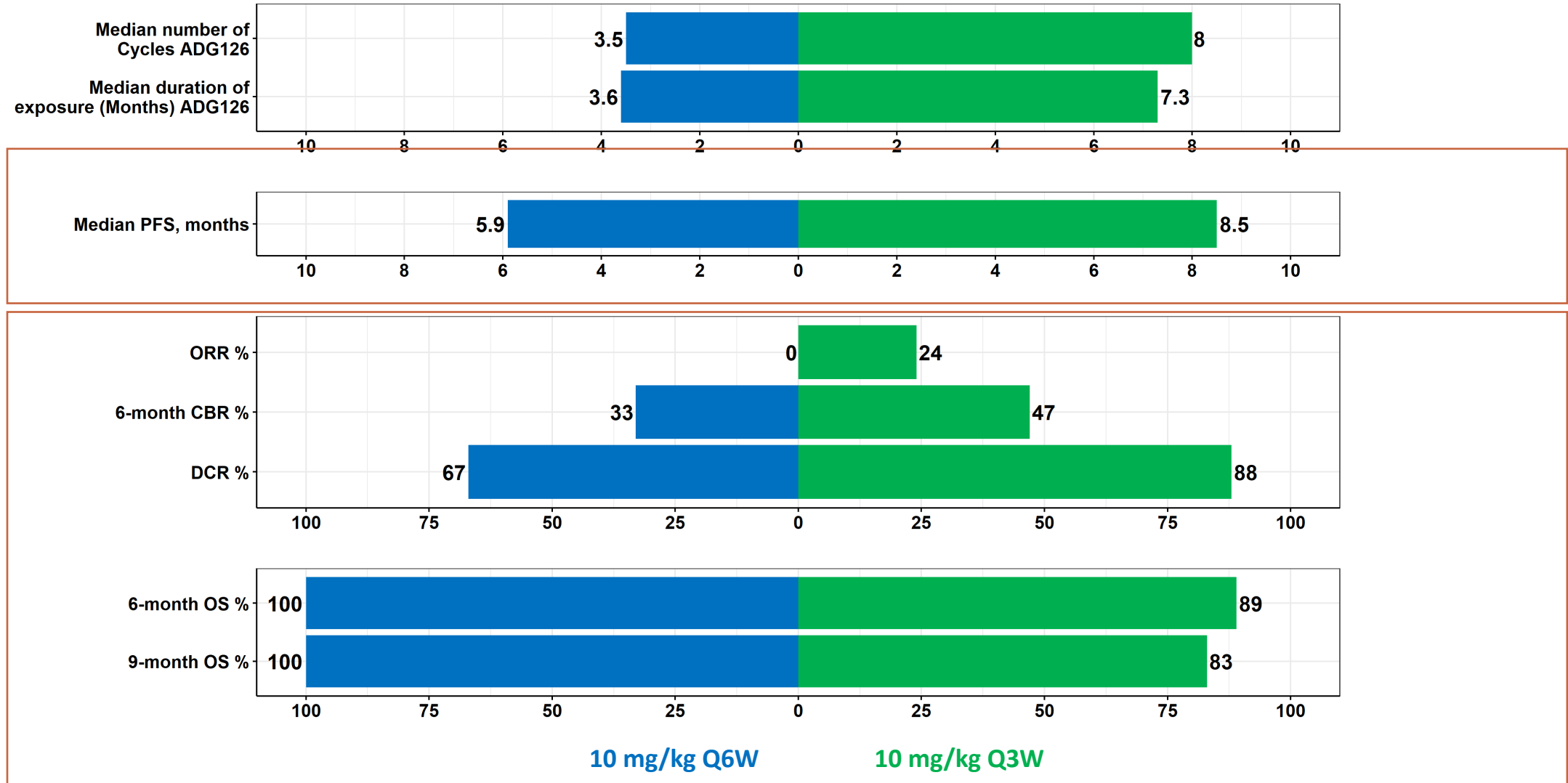
ADG126 / Pembrolizumab	N	6-month OS% (95% CI)	9-month OS% (95% CI)	12-month OS% (95% CI)	Median follow-up (95% CI)
All MSS CRC (NLM)	36	91 (76-97)	86 (69-94)	74 (55-86)	12.2 (10.4-13.6)
Patients w. ≥4 Cycles of Treatment (NLM)	21	100 (NA-NA)	95 (70-99)	89 (61-97)	11.6 (9.5-12.7)
Patients w/o. Peritoneal Metastasis (NLPM)	24	92 (71-98)	87 (66-96)	82 (60-93)	12.7 (10.7-14.9)

ORR: overall response rate; BoR: Best of Response. CBR: clinical best response; DCR: Disease control rate. PR: Partial response (confirmed); SD: stable disease. Data cutoff date: July 30, 2024



# ESMO 2024 Poster

## Figure 6. Efficacy Comparisons between Two Dosing Regimens for the NLPM Patients



ORR: overall response rate; BoR: Best of Response. CBR: clinical best response; DCR: Disease control rate. PR: Partial response (confirmed); SD: stable disease. Data cutoff date: July 30, 2024

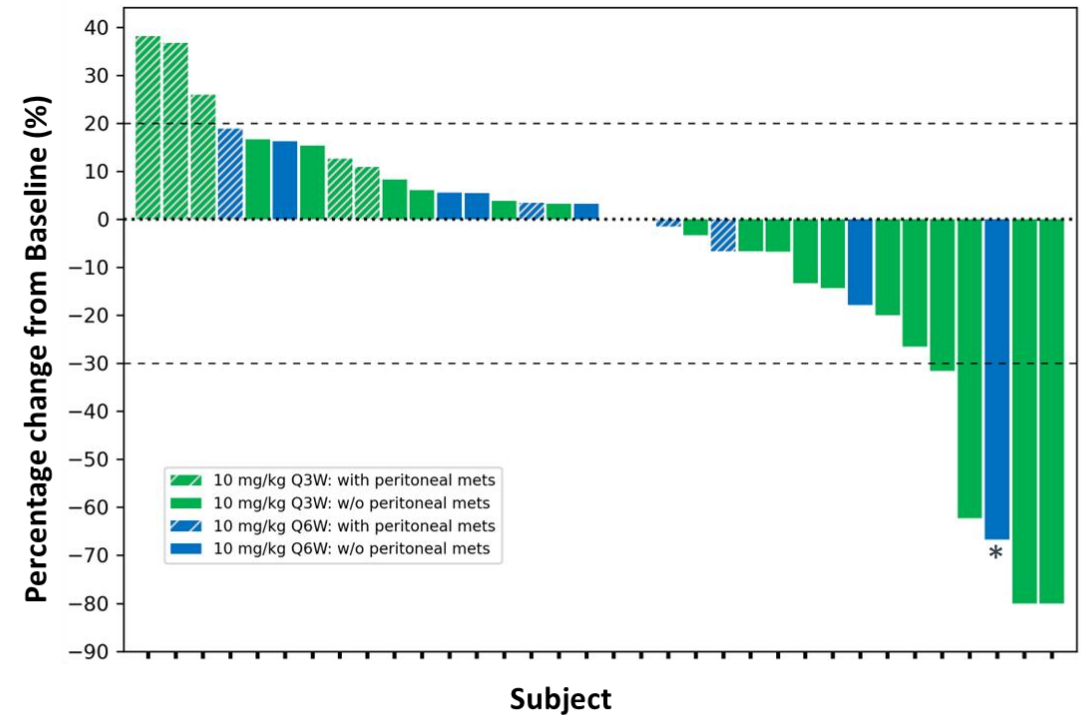
# ESMO 2024 Poster

## MSS CRC Patients Characteristics and Clinical Activities (ADG126 10 mg/kg Q6W & Q3W)

Table 3. Baseline Patient Characteristics of the MSS CRC Free of Liver Metastasis Cohort

Characteristics	N=36 <sup>#</sup>
Age (Years), Median(range)	59.5 (26-75)
Female, n(%)	19 (53%)
Race, n(%)	
Asian,(n%)	27 (75%)
White, n(%)	9 (25%)
ECOG, n(%)	
0	12 (33%)
1	24 (67%)
w/ Peritoneal involvement	12 (33%)
Number of regimens prior to treatment $\geq$ 3	12 (33%)
Prior immunotherapy, n(%)	0

Figure 4B. Target Lesion Response to ADD126/Pembrolizumab Treatment



Waterfall plot of 34 efficacy evaluable MSS CRC patients from 10 mg/kg dose level. A total of 4 confirmed PRs (Partial Response) and 21 SDs (Stable Disease) were observed. \* Target lesion assessed as "PR", overall assessment as "PD" due to new lesion.

#. All MSS-CRC without liver metastasis including 24 pts of 10 mg/kg Q3W and 10 pt of 10 mg/kg Q6W from both DE and EXP. No pts from 20 mg/kg Q3W are included.

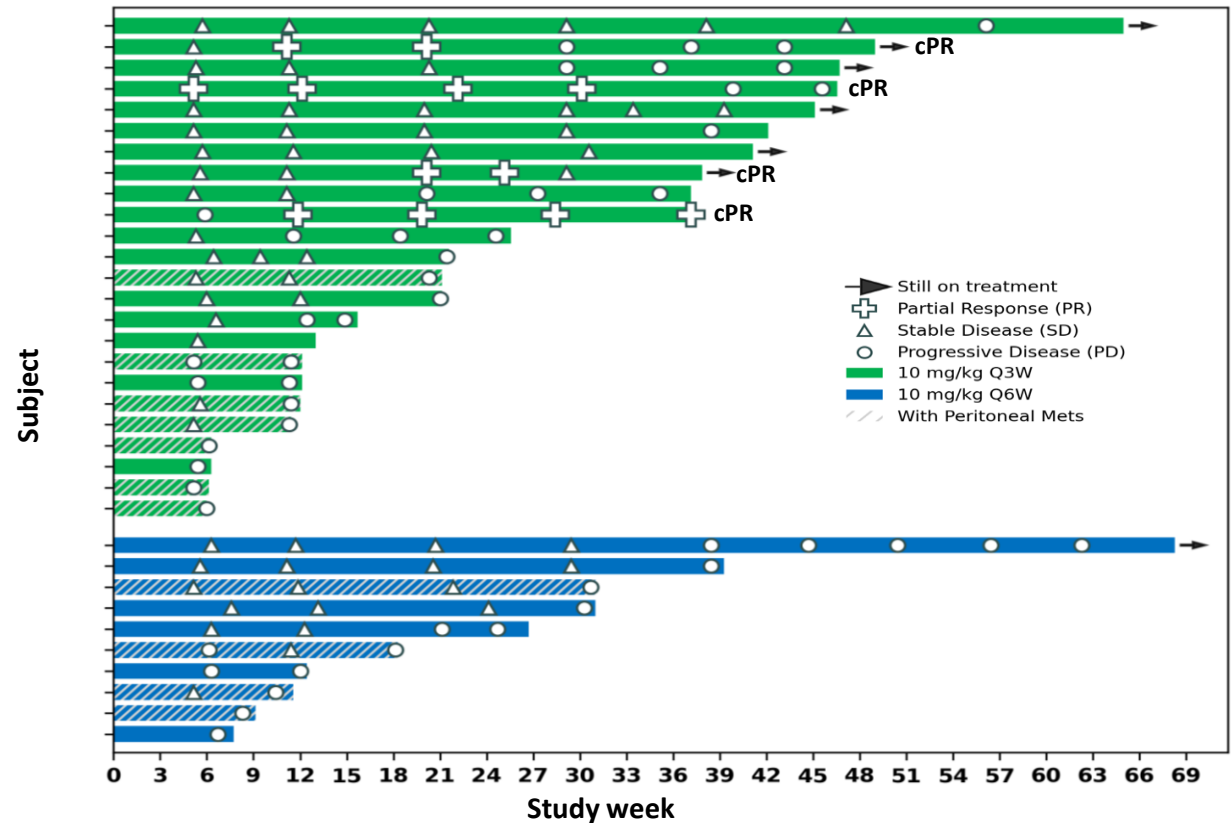
# ESMO 2024 Poster

## MSS CRC Patients Characteristics and Clinical Activities (ADG126 10 mg/kg Q6W & Q3W)

Table 3. Baseline Characteristics

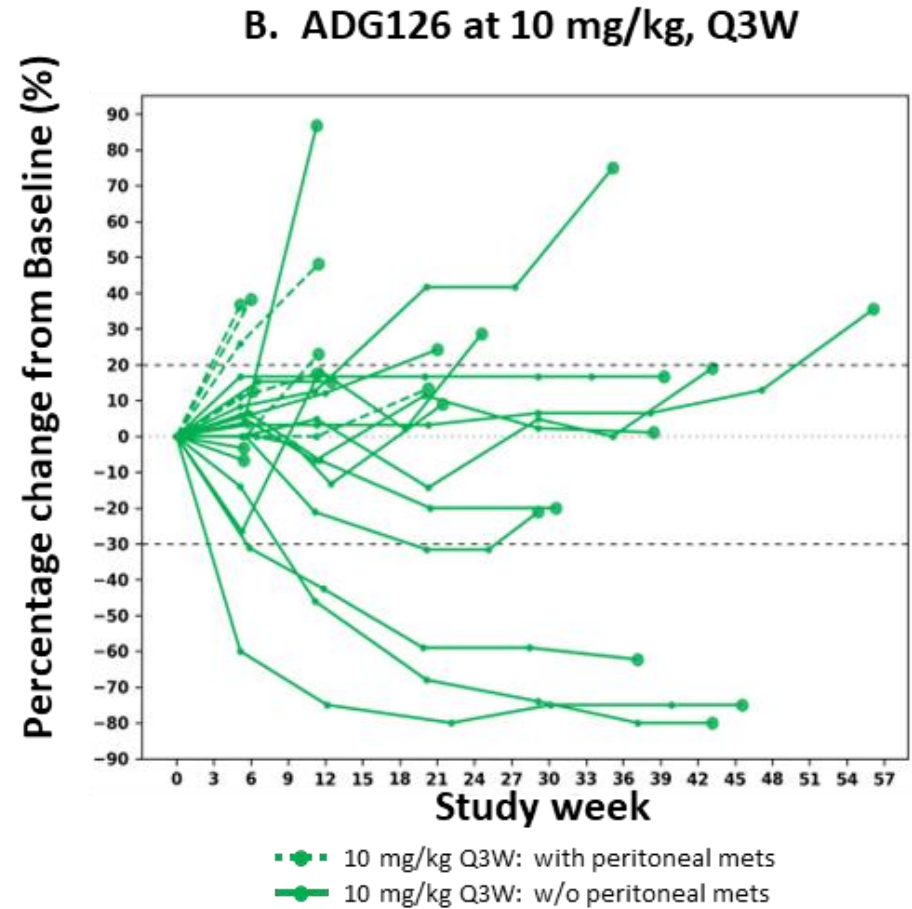
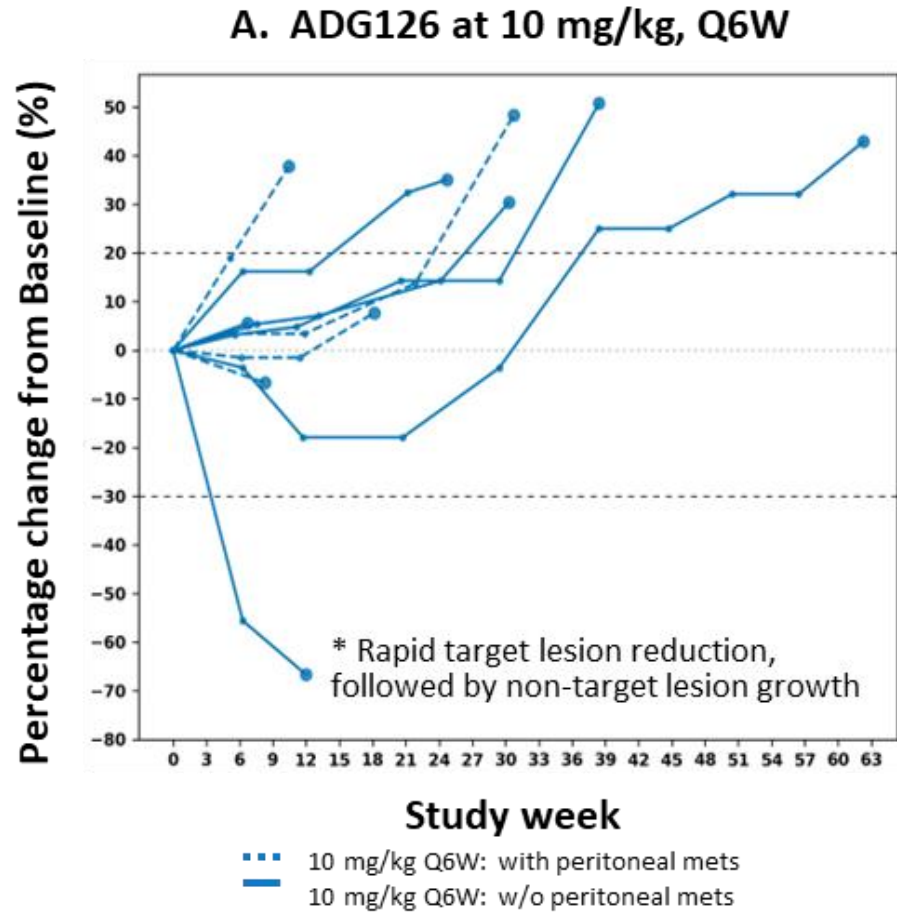
Characteristics	N=36*
Age (Years), Median(range)	59.5 (26-75)
Female, n(%)	19 (53%)
Race, n(%)	
Asian,(n%)	27 (75%)
White, n(%)	9 (25%)
ECOG 0/1, n(%)	12 (33%)/24 (67%)
w/ Peritoneal involvement	12 (33%)
<u>P</u> rior line of therapy $\geq$ 3	12 (33%)
Prior immunotherapy, n(%)	0

Figure 4A. Duration of Treatment (10 mg/kg ADG126/Pembrolizumab)



# ESMO 2024 Poster

## Figure 5. Spider Plots (Q6W VS Q3W)



ORR: overall response rate; BoR: Best of Response. CBR: clinical best response; DCR: Disease control rate.  
PR: Partial response (confirmed); SD: stable disease. Data cutoff date: July 30, 2024

# ESMO 2024 Poster Conclusions

- Muzastotug (ADG126) administered at 10 mg/kg Q6W and Q3W demonstrated a well-tolerated safety profile and encouraging clinical efficacy compared with historical benchmarks for 3L MSS CRC.
  - ADG126 10 mg/kg Q3W/Pembro showed a manageable G3 TRAEs (16%) and 8% discontinuation rate with no G4/5 TRAEs and no DLT; less frequent dosing (Q6W) showed an even better tolerated safety profile while maintaining OS.
  - Dose-dependent efficacy was observed between ADG126 10 mg/kg Q3W/Pembro and Q6W/Pembro. The former resulted in 4 confirmed PRs in MSS CRC (n=24), fulfilling success criteria of Simon's 2-stage design.
  - A 24% ORR and 8.5-month mPFS were observed for NLPM MSS CRC patients treated with ADG126 10 mg/kg Q3W. The results from this larger sample size (N=17) reproduced the earlier data.<sup>1</sup>
  - The 12-month OS rates are 74% and 82% for NLM and NLPM MSS CRC, respectively, in combined cohorts of ADG126 10 mg/kg Q3W/Pembro and Q6W/Pembro.
- The totality of the data suggest that ADG126 could be a potential best-in-class anti-CTLA-4 agent in combination with anti-PD-1 therapy. More work is ongoing.
  - The 20 mg/kg dose level is being evaluated as a loading dose as its initial cycle was generally well-tolerated.
  - Measurement of PD-L1 expression and other biomarkers are planned to investigate correlation with responses.
- The overall performance and therapeutic index of ADG126 at 10 mg/kg Q3W/Q6W in combination with pembrolizumab supports that this IO combination regimen may be suited for combination with other standard of care agents to further enhance clinical impact on a broader patient population.