

## Supplementary Online Content

Johnson ML, Braitheh F, Grilley-Olson JE, et al. Assessment of subcutaneous vs intravenous administration of anti-PD-1 antibody PF-06801591 in patients with advanced solid tumors: a phase 1 dose-escalation trial. Published online May 30, 2019. *JAMA Oncol*. doi:10.1001/jamaoncol.2019.0836

**eFigure 1.** Kaplan-Meier Estimate of Progression-Free Survival Based on Investigator Assessment by IV Combined versus Subcutaneous (RECIST), mITT

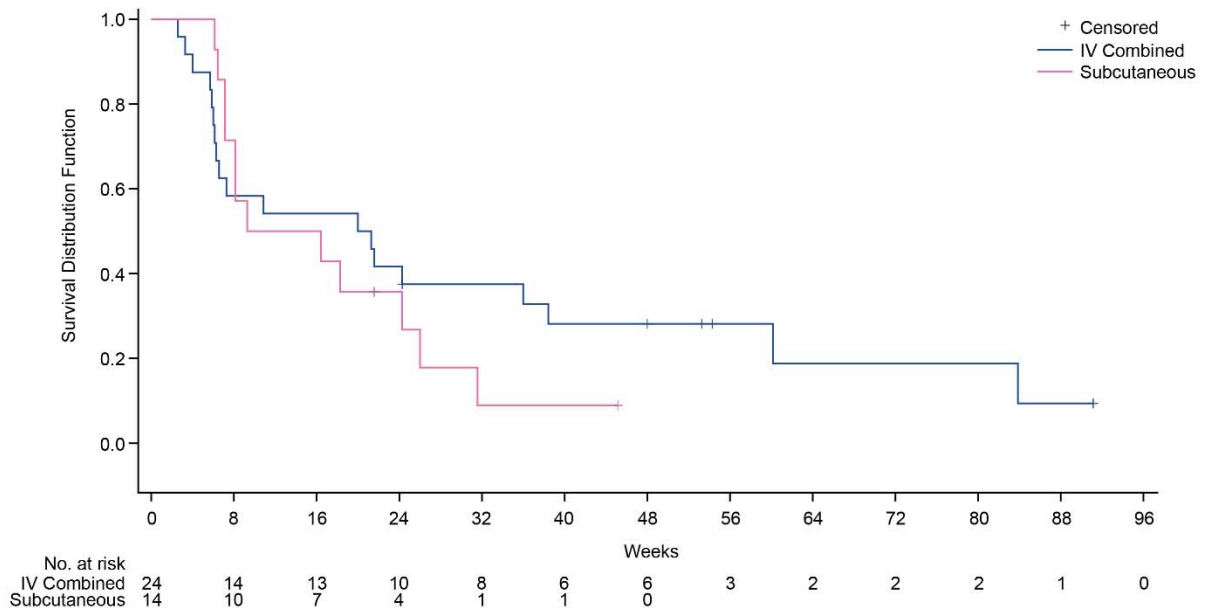
**eTable 1.** Treatment-Emergent Adverse Events—All Cycles, by PF-06801591 Arm

**eTable 2.** Summary of Tumor Assessments, mITT Analysis

**eTable 3.** PK Parameters of PF-06801591 After IV or SC Administration

This supplementary material has been provided by the authors to give readers additional information about their work.

**eFigure 1. Kaplan-Meier Plot of Progression-Free Survival Based on Investigator Assessment by IV Combined versus Subcutaneous (RECIST), mITT**



IV, intravenous; mITT, modified intent-to-treat population; RECIST, Response Evaluation Criteria in Solid Tumors

**eTable 1. Treatment-Emergent Adverse Events – All Cycles, by PF-06801591 Arm**

AEs, n (%)	All IV Doses n=25	300 mg SC n=15	Total N=40
<b>All-causality AEs (≥20%)</b>			
Any AE	24 (96)	15 (100)	39 (98)
Grade 3-4	6 (24)	4 (27)	9 (23)
Grade 5 <sup>a</sup>	5 (20)	3 (20)	8 (20)
Fatigue	12 (48)	5 (33)	17 (43)
Decreased appetite	6 (24)	7 (47)	13 (33)
Vomiting	7 (28)	6 (40)	13 (33)
Constipation	10 (40)	2 (13)	12 (30)
Diarrhea	8 (32)	4 (27)	12 (30)
Nausea	5 (20)	6 (40)	11 (28)
Dyspnea	6 (24)	5 (33)	11 (28)
Anemia	7 (28)	3 (20)	10 (25)
Cough	5 (20)	4 (27)	9 (23)
Back pain	4 (16)	4 (27)	8 (20)
<b>Treatment-related AEs (≥10%)</b>			
Any AE	19 (76)	13 (87)	32 (80)
Grade 3 <sup>b</sup>	3 (12)	1 (7)	4 (10)
Fatigue	5 (20)	4 (27)	9 (23)
Diarrhea	3 (12)	4 (27)	7 (18)
Decreased appetite	2 (8)	4 (27)	6 (15)
Nausea	3 (12)	2 (13)	5 (13)
Arthralgia	2 (8)	2 (13)	4 (10)
Dyspnea	1 (4)	3 (20)	4 (10)
Mucosal inflammation	3 (12)	1 (7)	4 (10)
Pruritus	4 (16)	0	4 (10)
Vomiting	2 (8)	2 (13)	4 (10)
<b>Immune-related AEs<sup>c</sup></b>			
Any AE	10 (40)	3 (20)	13 (33)
Pruritus	3 (12)	0	3 (8)
Blood TSH increased	1 (4)	1 (7)	2 (5)
Hypothyroidism	2 (8)	0	2 (5)
Hyperthyroidism	1 (4)	1 (7)	2 (5)
Pneumonitis	1 (4)	1 (7)	2 (5)
Hyperglycemia	1 (4)	0	1 (3)
Pruritus generalized	1 (4)	0	1 (3)
Dermatitis bullous	1 (4)	0	1 (3)
Pancreatic failure	1 (4)	0	1 (3)
Peripheral sensory neuropathy	1 (4)	0	1 (3)
ALT increased	1 (4)	0	1 (3)
AST increased	1 (4)	0	1 (3)
Amylase increased	1 (4)	0	1 (3)
Arthralgia	1 (4)	0	1 (3)
Enterocolitis	1 (4)	0	1 (3)
Diarrhea	1 (4)	0	1 (3)
<b>Discontinuations due to AE</b>			
All-causality	7 (28)	1 (7)	8 (20)
Treatment-related	2 (8)	1 (7)	3 (8)
<b>Interruptions due to AE</b>			
All-causality	10 (40)	3 (20)	13 (33)
Treatment-related	6 (24)	2 (13)	8 (20)

<sup>a</sup> There were 8 grade 5 AEs: disease/neoplasm progression (n=7) and small intestinal obstruction (n=1). <sup>b</sup> There were no grade 5 treatment-related AEs; treatment-related grade 4 AE (hyperglycemia) occurred in one patient treated with 10 mg/kg IV. <sup>c</sup> Represents complete listing of all immune-related observed AEs. There were no grade >3 immune-related AEs; one patient could have had more than one AE.

AE, adverse event; ALT, alanine aminotransferase; AST, aspartate transaminase; IV, intravenous; SC, subcutaneous; TSH, thyroid-stimulating hormone.

**eTable 2. Summary of Tumor Assessments, mITT<sup>a</sup> Analysis**

	RECIST			irRECIST
	PD-L1 Low n=20	PD-L1 High n=10	Total n=38	Total n=38
	n (%)	n (%)	n (%) [95% CI]	n (%) [95% CI]
Disease control rate,	11 (55)	6 (60)	21 (55) [38, 71]	24 (63) [46, 78]
Complete response	0	0	0 [0, 9]	0 [0, 9]
Partial response	1 (5)	4 (40)	7 (18) [8, 34]	7 (18) [8, 34]
Stable disease	10 (50)	2 (20)	14 (37) [22, 54]	17 (45) [29, 62]
Progressive disease	8 (40)	4 (40)	15 (40) [24, 57]	12 (32) [18, 49]
Not evaluable	1 (5)	0	2 (5) [1, 18]	2 (5) [1, 18]

<sup>a</sup> Included all enrolled patients who received  $\geq 1$  dose of PF-06801591, had measurable disease baseline assessment (within 28 days prior to study entry) and  $\geq 1$  post-baseline assessment or disease progression or death before the first tumor assessment.

<sup>b</sup> Total includes patients with low or high PD-L1 expression, and those with not determined PD-L1 expression. <sup>c</sup> Among the 7 partial responders, 6 partial responders had confirmed best overall response of PR; 1 patient achieved partial response but disease progressed in the next subsequent tumor scan by RECIST 1.1, and non-determined by irRECIST.

CI, confidence interval; mITT, modified intent-to-treat; irRECIST, immune-related Response Evaluation Criteria in Solid Tumors.

**eTable 3. PK Parameters of PF-06801591 After IV or SC Administration**

Dose	n	C <sub>max</sub> , µg/mL, mean (CV%)	T <sub>max</sub> , days, median (range)	AUC <sub>τ</sub> , µg-day/mL, mean (CV%)
<b>Cycle 1</b>				
0.5 mg/kg IV	2	11.8, 12.0 <sup>a</sup>	0.045, 0.071 <sup>a</sup>	117, 124 <sup>a</sup>
1 mg/kg IV	7	21.8 (24)	0.083 (0.045-1.2)	203 (36)
3 mg/kg IV	8	68.7 (26)	0.049 (0.042-0.97)	637 (22)
10 mg/kg IV	7	229 (35)	0.050 (0.043-0.090)	2106 (30)
300 mg SC	15	23.5 (48)	8.1 (2.1-28)	474 (48) <sup>b</sup>
<b>Cycle 4</b>				
0.5 mg/kg IV	2	10.5, 15.5 <sup>a</sup>	0.043, 0.13 <sup>a</sup>	193, 195 <sup>a</sup>
1 mg/kg IV	3	26.5 (42)	0.083 (0.045-7.0)	293 (19)
3 mg/kg IV	3	114 (27)	0.049 (0.047-0.050)	1433 (36)
10 mg/kg IV	5	431 (43)	0.049 (0.045-0.090)	5354 (32)
300 mg SC	7	58.4 (27)	6.9 (6.8-7.0)	1355 (26) <sup>c</sup>

<sup>a</sup> Individual values are presented if n ≤ 2. <sup>b</sup> Value reported for n = 13. <sup>c</sup> Value reported for n = 6.

AUC<sub>τ</sub>, area under the serum concentration–time curve from time zero to time τ, the dosing interval, where τ=21 days for IV and 28 days for SC; C<sub>max</sub>, maximum observed serum concentration; CV, coefficient of variation; IV, intravenous; PK, pharmacokinetic; SC, subcutaneous; T<sub>max</sub>, time to maximum observed serum concentration.