Supplementary Appendix Table of Contents

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List of Participating Investigators

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Supplementary Methods: Quality of Life

Patients' quality of life was assessed using the functional assessment of cancer therapy - kidney symptom index - disease-related symptoms (FKSI-DRS) score, a subscale of the 15-item FKSI (FKSI-15)[1]. Patients at each site completed the FKSI-DRS questionnaire after randomization and prior to dosing on day 1 of each cycle beginning with cycle 2.

The FKSI-DRS questionnaire comprises nine symptom-specific questions that address lack of energy, pain, weight loss, bone pain, fatigue, dyspnea, cough, fevers, and hematuria.[1] Questionnaire completion was defined as answering at least five of nine items. Each symptom was rated on a Likert-type scale ranging from 0 to 4, with 0 representing "Not at all" and 4 representing "Very much." Scores for each answered item in each questionnaire were reversed and individual reversed items were summed to obtain a score. This score was multiplied by the number of items in the subscale (i.e., nine) and divided by the number of items answered. A summary score ranging from 0 to 36 was then produced, with 36 being the best possible score (no symptoms) and 0 being the worst possible score (all worst symptoms).

The FKSI-DRS completion rate, defined as the proportion of questionnaires completed and received out of the total number of questionnaires anticipated to be completed for patients still on treatment or in follow-up, was calculated and summarized.

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Table S1. Antitumor Activity (All Randomized Patients).

	Nivolumab N=410	Everolimus N=411
Objective response rate, n (%)	103 (25)	22 (5)
Odds ratio (95% CI)	5.98 (3.68–9.72)	
Best overall response, n (%)		
Complete response	4 (1)	2 (1)
Partial response	99 (24)	20 (5)
Stable disease	141 (34)	227 (55)
Progressive disease	143 (35)	114 (28)
Not evaluated	23 (6)	48 (12)
Median time to response, months (range)	3.5 (1.4–24.8)	3.7 (1.5–11.2)
Median duration of response, months (range)	12.0 (0–27.6+)	12.0 (0–22.2+)

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Table S2. Quality of Life (FKSI-DRS) Completion Rate and Score Summary.

Visit	Nivolumab N=410				Everolimus N=411			
	No patients in study/No of valid questionnaires	Completion rate, %	N	Score Median (range)	No patients in study/No of valid questionnaires	Completion rate, %	N	Score Median (range)
Week 1 (Baseline)	406/327	81	327	31.0 (11.0–36.0)	397/363	91	363	31.0 (6.0–36.0)
Week 4	386/359	93	359	31.0 (15.0–36.0)	371/343	93	343	29.0 (13.0–36.0)
Week 8	347/319	92	319	31.0 (13.0–36.0)	317/288	91	288	30.0 (0.0–36.0)
Week 12	316/282	89	282	32.0 (17.0–36.0)	246/232	94	232	30.0 (16.0–36.0)
Week 16	277/246	89	246	32.0 (14.0–36.0)	214/198	93	198	31.0 (14.0–244/22136.0)
Week 20	244/221	91	221	32.0 (18.0–36.0)	176/165	94	165	31.0 (12.0–36.0)
Week 24	218/197	90	197	32.0 (19.0–	164/151	92	151	31.0 (14.0–

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				36.0)				36.0)
Week 28	193/174	90	174	33.0 (18.0–36.0)	139/129	93	129	31.0 (17.0–36.0)
Week 32	182/168	92	168	33.0 (19.0–36.0)	126/109	87	109	31.0 (18.0–36.0)
Week 36	172/153	89	153	33.0 (17.0–36.0)	114/104	91	104	31.0 (18.0–36.0)
Week 40	160/141	88	141	33.0 (19.0–36.0)	104/91	88	91	30.0 (17.0–36.0)
Week 44	144/126	88	126	33.0 (22.0–36.0)	94/80	85	80	31.0 (13.0–36.0)
Week 48	135/120	89	120	33.0 (22.0–36.0)	90/77	86	77	31.0 (18.0–36.0)
Week 52	123/105	85	105	33.0 (22.0–36.0)	78/69	89	69	31.0 (21.0–36.0)
Week 56	112/97	87	97	33.0 (23.0–36.0)	73/64	88	64	31.0 (11.0–36.0)
Week 60	107/96	90	96	33.5 (18.0–36.0)	62/53	86	53	31.0 (18.0–36.0)
Week 64	105/88	84	88	34.0 (21.0–	58/47	81	47	30.0 (18.0–

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				36.0)				36.0)
Week 68	95/78	82	78	34.0 (21.0–36.0)	48/37	77	37	31.0 (17.0–36.0)
Week 72	84/68	81	68	34.0 (22.0–36.0)	42/32	76	32	32.0 (15.0–36.0)
Week 76	78/64	82	64	33.0 (21.0–36.0)	37/30	81	30	31.5 (16.0–36.0)
Week 80	71/58	82	58	34.0 (23.0–36.0)	33/26	79	26	31.0 (17.0–36.0)
Week 84	61/49	80	49	33.0 (22.0–36.0)	28/23	82	23	30.0 (13.0–36.0)
Week 88	55/48	87	48	33.5 (22.0–36.0)	23/17	74	17	30.0 (15.0–35.0)
Week 92	44/35	80	35	34.0 (23.0–36.0)	20/14	70	14	30.0 (20.0–36.0)
Week 96	37/32	87	32	34.0 (23.0–36.0)	19/14	74	14	29.5 (17.0–36.0)
Week 100	33/30	91	30	33.5 (24.0–36.0)	14/9	64	9	29.0 (18.0–31.0)
Week 104	26/21	81	21	34.0 (25.0–	10/9	90	9	30.0 (20.0–

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				36.0)				36.0)
Week 108	19/15	79	15	32.0 (21.0–36.0)	5/2	40	2	33.0 (30.0–36.0)
Week 112	15/12	80	12	34.0 (28.0–36.0)	2/2	100	2	32.0 (28.0–36.0)

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Figure S1. CONSORT Diagram for Patient Disposition.

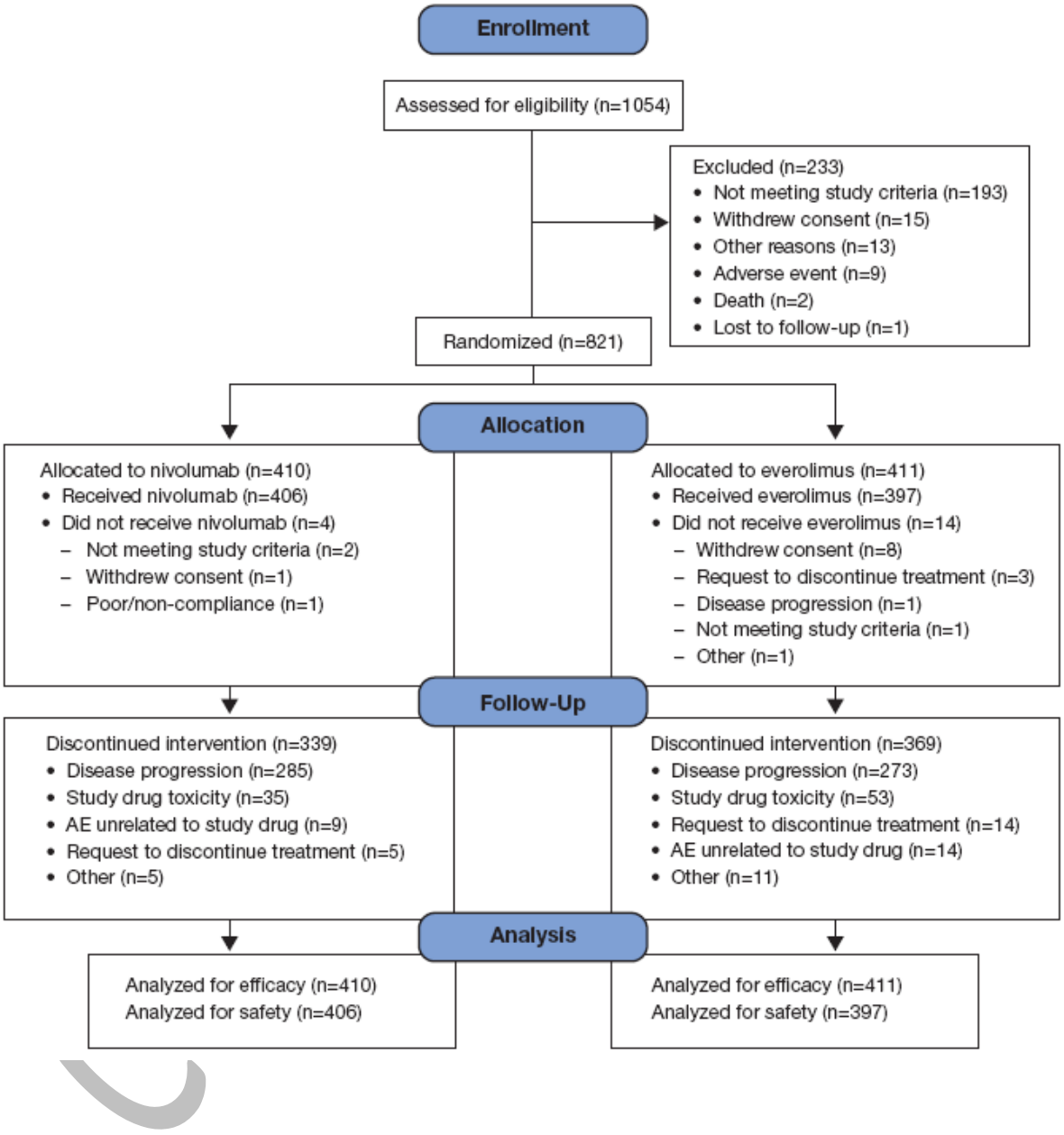

Figure S2. Duration of Response.

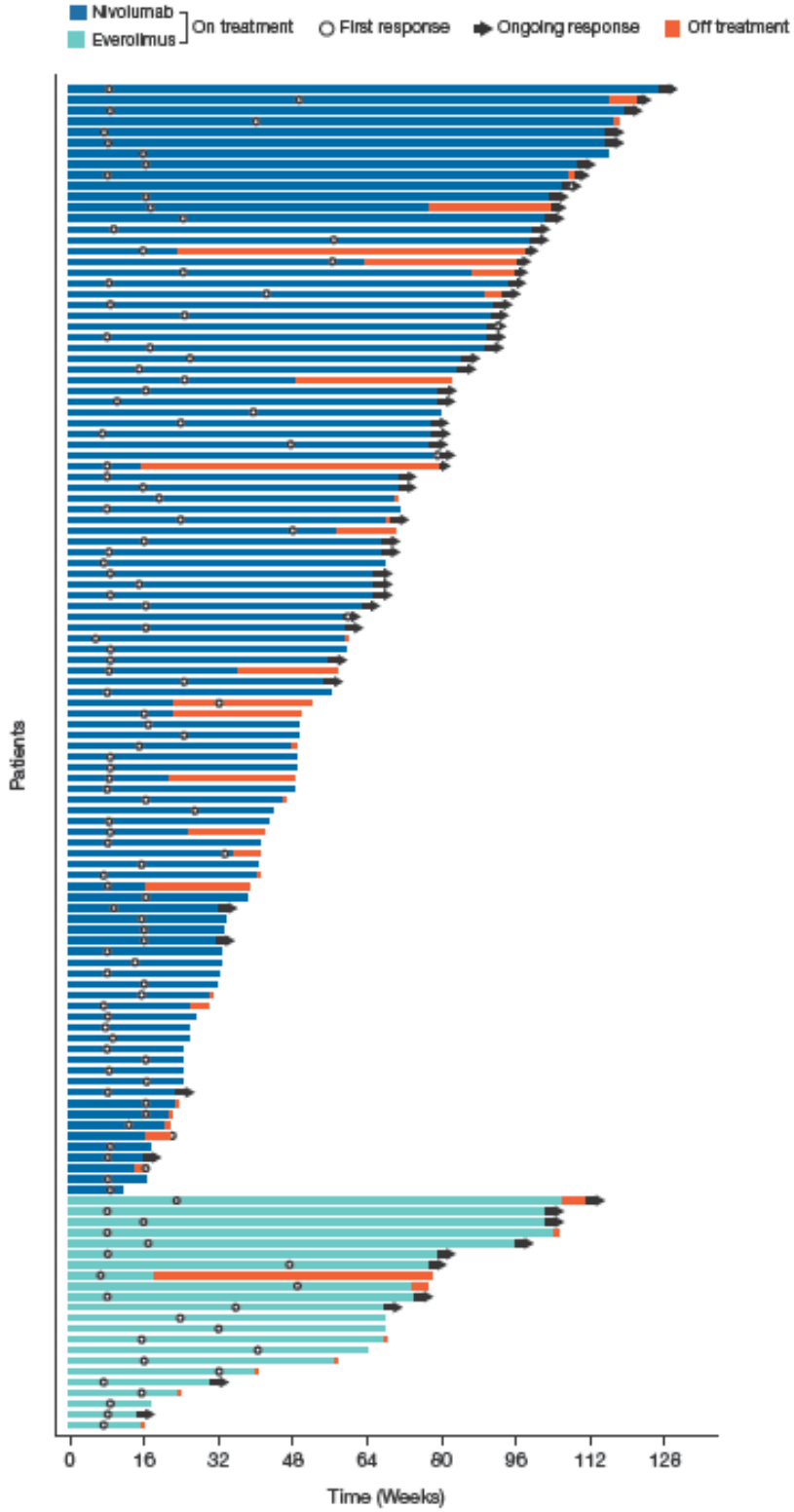

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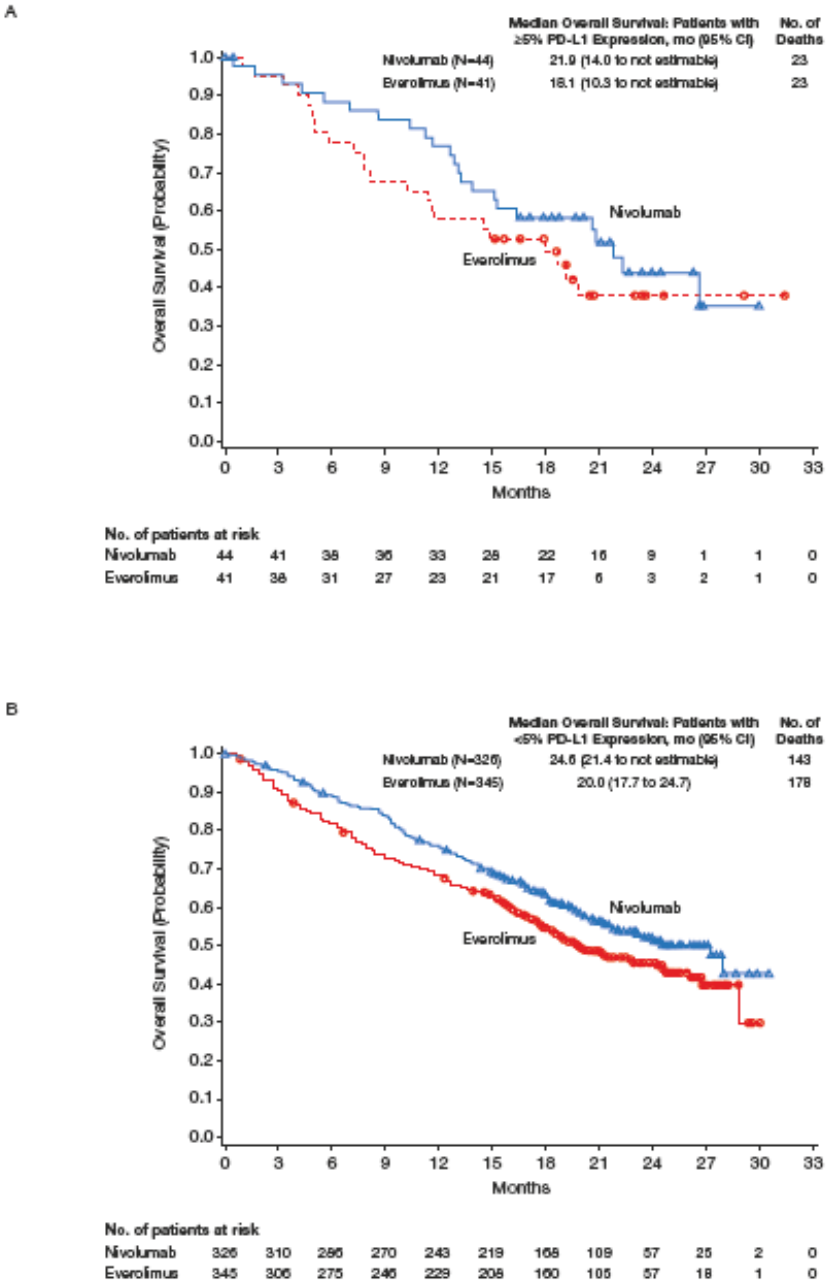
Figure S3. Kaplan–Meier Curve for Overall Survival by PD-L1 Expression ≥5% (A) and PD-L1 expression <5% (B).



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1. Cella D, Yount S, Brucker PS, et al. Development and validation of a scale to measure disease-related symptoms of kidney cancer. Value Health 2007;10:285-93.

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