Patient sample ID	MDACC protocol	Stage of disease	Current therapy (at time of sample acquisition)	Prior systemic therapy	Response by RECIST 1.1 at sample acquisition	Time (days) since last dose of therapy (at time of sample acquisition)	Tissue type	BRAF status	NRAS status
227	2012-0846, 2015-0041	3c	Ipilimumab + Nivolumab (neoadjuvant)	None	SD	17	Cutaneous melanoma	V600E	WT
267	2012-0846	4a	Pembrolizumab	Ipilimumab	SD	18	Acral melanoma	WT	WT
193	2012-0846, PA13-0291	4c	Ipilimumab + Nivolumab	Ipilimumab (adjuvant)	PR	10	Cutaneous melanoma	V600E	WT
170	2012-0846, PA13-0291	4c	Ipilimumab + Nivolumab	High-dose IL-2; Ipilimumab; Pembrolizumab	PD	13	Cutaneous melanoma	WT	Q61K
120	2012-0846, LAB00-063	4c	Ipilimumab	Nivolumab	PD	59	Cutaneous melanoma	WT	Q61R
251	2015-0041, 2012-0846, PA13-0291	4a	Nivolumab (neoadjuvant)	None	SD	22	Cutaneous melanoma	V600E	WT
224	2015-0041, LAB00-063, 2012-0846, PA13-0291	3c	Nivolumab (neoadjuvant)	None	SD	21	Cutaneous melanoma	WT	Q61K

Table S3. *Related to Figure 5 and S5*. **Clinical annotation of human melanoma samples analyzed by mass cytometry.**

A cohort of 7 patients with metastatic melanoma treated at The University of Texas MD Anderson Cancer Center (MDACC) had tumor samples collected and analyzed under Institutional Review Board (IRB)–approved protocols. Cryopreserved tumor digests were analyzed by mass cytometry. The relevant clinical annotations of these patient samples are denoted. Current therapy is displayed (anti-CTLA-4, Ipilimumab; anti-PD-1, Nivolumab or Pembrolizumab; or combination thereof). Response according to RECIST 1.1 criteria at the time of sample acquisition is noted (PR, partial response; SD, stable disease; PD, progressive disease). Hotspot mutational status of *BRAF* and *NRAS* are denoted as wild-type (WT) or the relevant mutant allele.