

Supplementary information

**Nociceptor neurons affect cancer
immunosurveillance**

In the format provided by the
authors and unedited

| Specimen | Stage | Type | Location | Breslow (mm) | Ulceration |
|----------|-------|-----------------------|--------------------|---------------|------------|
| HN480 | pT4a | Nodular | R. temple | 7 to 0.7 | No |
| DERM 103 | pT1a | Superficial spreading | L. post. shoulder | 0.7 | No |
| DERM 105 | pT2a | Nevoid | R. flank | 1.1 | No |
| DERM 106 | pT2a | NOS | L. thigh | 1.2 | No |
| DERM 107 | pT2a | NOS | L. upper outer arm | 1.6 | No |
| DERM 110 | pT1b | Nevoid | L. lat. upper arm | 0.81 | No |
| DERM 112 | pT4b | Nodular | L. postaur. neck | 11.3 | Yes |
| DERM 113 | pT4b | NOS | Vulva | at least 19 | Yes |
| DERM 114 | pT4a | Nodular | R. shoulder | 16 | No |
| DERM 115 | pT2a | i.d. congenital nevus | L. back | 2.8 and 0.8mm | No |

| Specimen | Clark level | TILs | Mitotic Index (per mm ²) | Distant Mets |
|----------|-------------|----------------------|--------------------------------------|--------------|
| HN480 | IV | "Present, nonbrisk" | 10 | No |
| DERM 103 | NC | NC | "Low" | No |
| DERM 105 | III | "Slight to moderate" | "Low" | No |
| DERM 106 | IV | NC | "Low" | No |
| DERM 107 | IV | "Slight to moderate" | 3 ("High") | No |
| DERM 110 | IV | "Slight to moderate" | 2 ("High") | No |
| DERM 112 | V | "Present, nonbrisk" | 11 | Liver |
| DERM 113 | NC | No | 5 ("High") | Liver |
| DERM 114 | V | "Slight to moderate" | 4 ("High") | Liver, lung |
| DERM 115 | IV | "Sparse" | 1 "Low" | Brain |

Supplementary Table 1. Board-certified pathologist notes on the specimens used in this study.

| Antibody | Company | Clone/cat number | Dilution/concentration |
|-----------------------------|----------------------------|------------------------|------------------------|
| anti-AnnexinV-APC and 7-AAD | BioLegend | cat no: 640930 | 1:100 |
| anti-CD11b-APC/Cy7 | BioLegend | cat no: 101226 | 1:100 |
| anti-CD16/32 | BioLegend | cat no: 156604 | 1:100 |
| anti-CD28 | Bio X Cell | cat no: BE0015-5 | 1:4000 |
| anti-CD3 | Bio X Cell | cat no: BE0001-1 | 200µg/mouse |
| anti-CD3 | Bio X Cell | cat no: BE00011 | 1:3000 |
| anti-CD45.1-BV421 | BioLegend | cat no: 110732 | 1:100 |
| anti-CD45.2-BV650 | BioLegend | cat no: 109836 | 1:100 |
| anti-CD45-Alexa Fluor 700 | BioLegend | cat no: 103128 | 1:100 |
| anti-CD45-BV421 | BioLegend | cat no: 103134 | 1:100 |
| anti-CD4-FITC | BioLegend | cat no: 100406 | 1:100 |
| anti-CD4-PerCP/Cyanine5.5 | BioLegend | cat no: 100540 | 1:100 |
| anti-CD8 | Bio X Cell | cat no: BP0061 | 200µg/mouse |
| anti-CD8-AF700 | BioLegend | cat no: 100730 | 1:100 |
| anti-CD8-BV421 | BioLegend | cat no: 100753 | 1:100 |
| anti-CD8-Pacific Blue | BioLegend | cat no: 100725 | 1:100 |
| anti-CD8-PerCP/Cyanine5.5 | BioLegend | cat no: 100734 | 1:100 |
| anti-GFP | Aves Labs | cat no: GFP-1020 | 1:500 |
| anti-H-2Kb/OVA257-264 | NIH tetramer core facility | cat no: IEDB ID: 58560 | 1:100 |
| anti-IFN-γ-APC | BioLegend | cat no: 505810 | 1:100 |
| anti-IFN-γ-FITC | BioLegend | cat no: 505806 | 1:100 |
| anti-IgG(H+L)-AF488 | Invitrogen | cat no: A28175 | 1:500 |
| anti-IL-2-BV510 | BioLegend | cat no: 503833 | 1:100 |
| anti-IL-2-Pacific Blue | BioLegend | cat no: 503820 | 1:100 |
| anti-IL2-Pecy7 | BioLegend | cat no: 503832 | 1:100 |
| anti-IL4 | Bio X Cell | cat no: BE0045 | 0.1:1000 - 1:1000 |
| anti-Lag3-PE | BioLegend | cat no: 125208 | 1:100 |
| anti-Lag3-PerCP/Cyanine5.5 | BioLegend | cat no: 125212 | 1:100 |
| anti-mCherry | OriGene | cat no: AB0040-200 | 1:500 |
| anti-PD1-PE-Cy7 | BioLegend | cat no: 329917 | 1:100 |
| anti-PDL1 | Bio X Cell | cat no: BE0101 | 6mg/kg |
| anti-Tim3-APC | BioLegend | cat no: 119706 | 1:100 |
| anti-TNFα-BV510 | BioLegend | cat no: 506339 | 1:100 |
| anti-TNFα-BV711 | BioLegend | cat no: 506349 | 1:100 |
| anti-TNFα-PE | BioLegend | cat no: 506306 | 1:100 |
| anti-TRPV1 | Alomone Labs | cat no: ACC-030 | 1:100 |
| DAPI | Vector Laboratories | cat no: H-1000 | 1:2000 |
| Viability Dye-eFluor780 | eBioscience | cat no: 65-0865-14 | 1:1000 |
| ZombieAqua | BioLegend | cat no: 423102 | 1:100 |

Supplementary Table 2. A list of all the antibodies used for *in vitro* immune cell activation, *in vivo* cell depletion or neutralisation, flow cytometry, IHC or iDISCO experiments. The list details the clone/catalog number, commercial provider and dilution/concentration/dose used.