

**Supplementary Figure 1** Study schedule during the treatment phase

Patients were randomized between DC vaccination with cisplatin and DC vaccination monotherapy. Standard evaluation in stage IV patients consisted of CT of chest and abdomen and in stage III patients of medical history and physical examination. *D* day, *DC* dendritic cell, *DTH* delayed type hypersensitivity, *ID* intradermally, *IV* intravenously, *m* month

**Supplementary Table 1a**

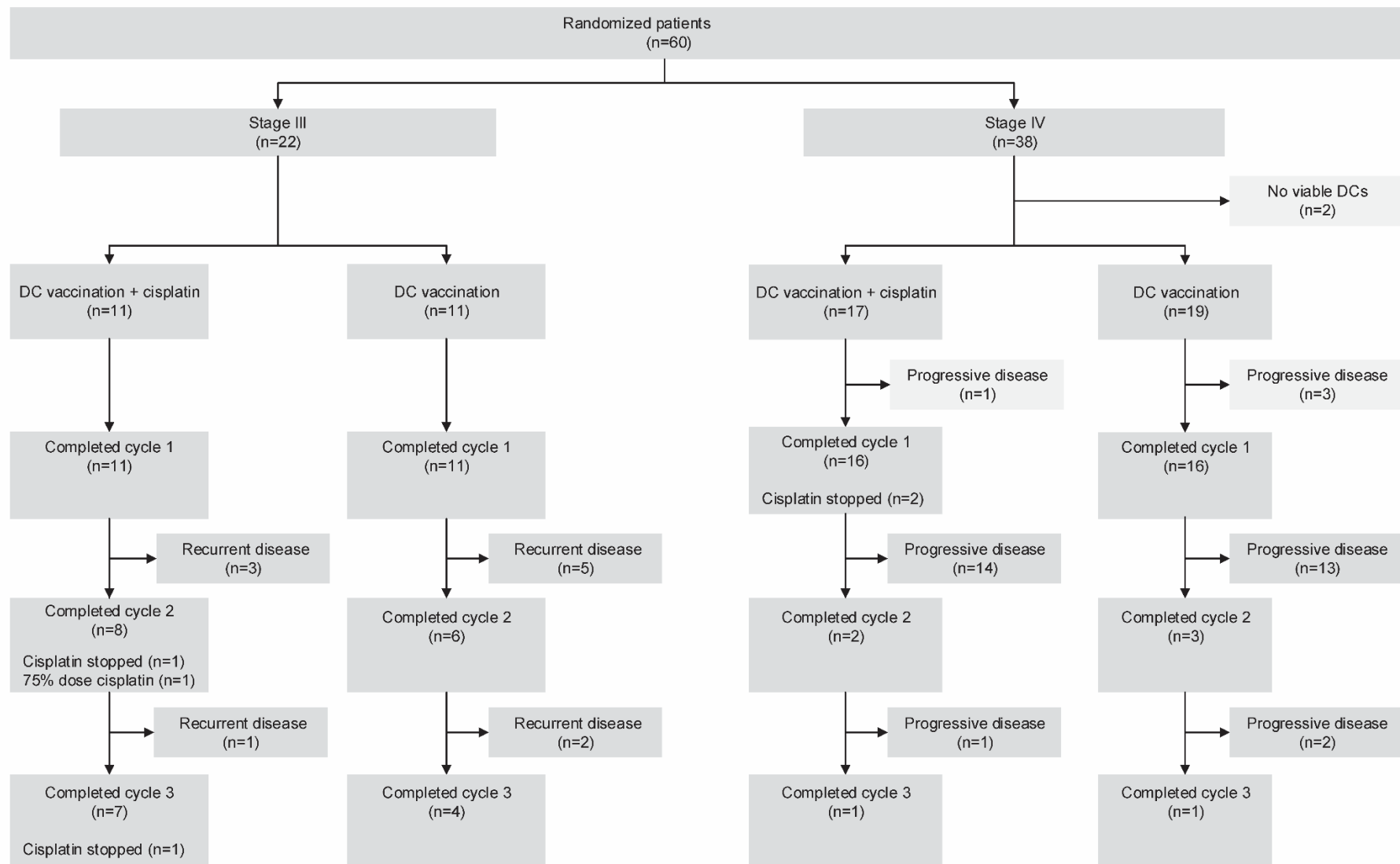
| Antibody    | Fluorescence | Clone<br>(catalogus number) | Dilution | Manufacturer   |
|-------------|--------------|-----------------------------|----------|----------------|
| Anti-STAT3  | Opal 650     | 79D7 (4904P)                | 1:100    | Cell Signaling |
| Anti-pSTAT3 | Opal 520     | D3A7 (9145L)                | 1:100    | Cell Signaling |

**Supplementary Table 1b**

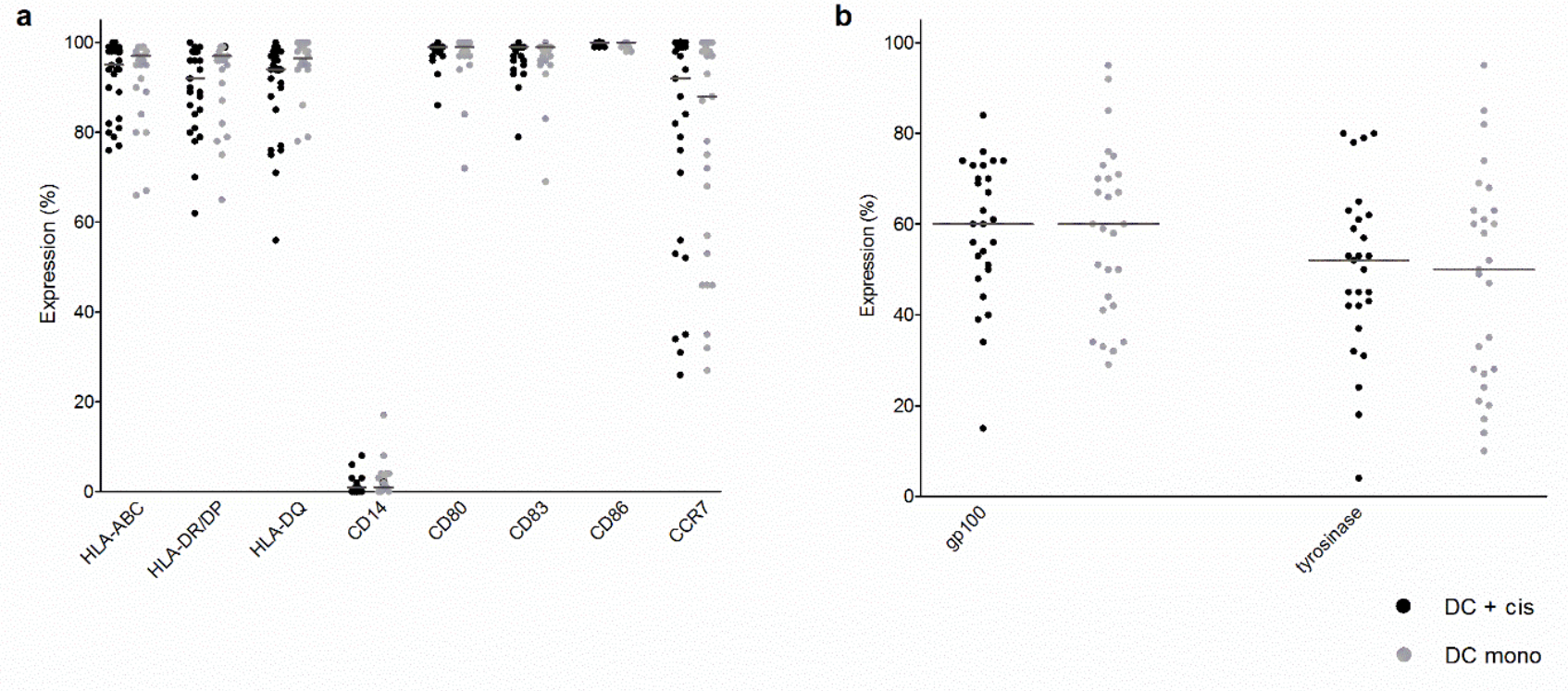
| Antibody     | Fluorescence | Clone<br>(catalogus number) | Dilution | Manufacturer           |
|--------------|--------------|-----------------------------|----------|------------------------|
| Anti-CD45RO  | Opal 620     | UCHL-1 (MS-112)             | 1:1000   | Thermo Fisher          |
| Anti-CD8     | Opal 690     | C8/144B (M7103)             | 1:200    | Dako                   |
| Anti-CD20    | Opal 570     | L26 (MS-340-S)              | 1:600    | Thermo Fisher          |
| Anti-CD3     | Opal 520     | Sp7 (RM-9107)               | 1:200    | Thermo Fisher          |
| Anti-Foxp3   | Opal 540     | 236A/E7 (14-4777)           | 1:100    | eBioscience Affymetrix |
| Melanoma mix |              |                             |          |                        |
| HMB-45       |              | HMB45 (M063401)             | 1:600    | Dako                   |
| Mart-1       | All Opal 650 | A103 (MS-799)               | 1:300    | Thermo Immunologic     |
| Tyrosinase   |              | T311 (MONX10591)            | 1:200    | Monosan                |
| SOX-10       |              | EP268 (383R)                | 1:500    | Cell Marque            |

**Supplementary Table 1c**

| Antibody        | Fluorescence | Clone<br>(catalogus number) | Dilution | Manufacturer           |
|-----------------|--------------|-----------------------------|----------|------------------------|
| Anti-CD45RO     | Opal 620     | UCHL-1 (MS-112)             | 1:1000   | Thermo Fisher          |
| Anti-Granzyme B | Opal 690     | EPR8260 (ab134933)          | 1:300    | Abcam                  |
| Anti-CD8        | Opal 570     | C8/144B (M7103)             | 1:1600   | Dako                   |
| Anti-CD3        | Opal 520     | Sp7 (RM-9107)               | 1:200    | Thermo Fisher          |
| Anti-Foxp3      | Opal 540     | 236A/E7 (14-4777)           | 1:100    | eBioscience Affymetrix |
| Melanoma mix    |              |                             |          |                        |
| HMB-45          |              | HMB45 (M063401)             | 1:600    | Dako                   |
| Mart-1          | All Opal 650 | A103 (MS-799)               | 1:300    | Thermo Immunologic     |
| Tyrosinase      |              | T311 (MONX10591)            | 1:200    | Monosan                |
| SOX-10          |              | EP268 (383R)                | 1:500    | Cell Marque            |

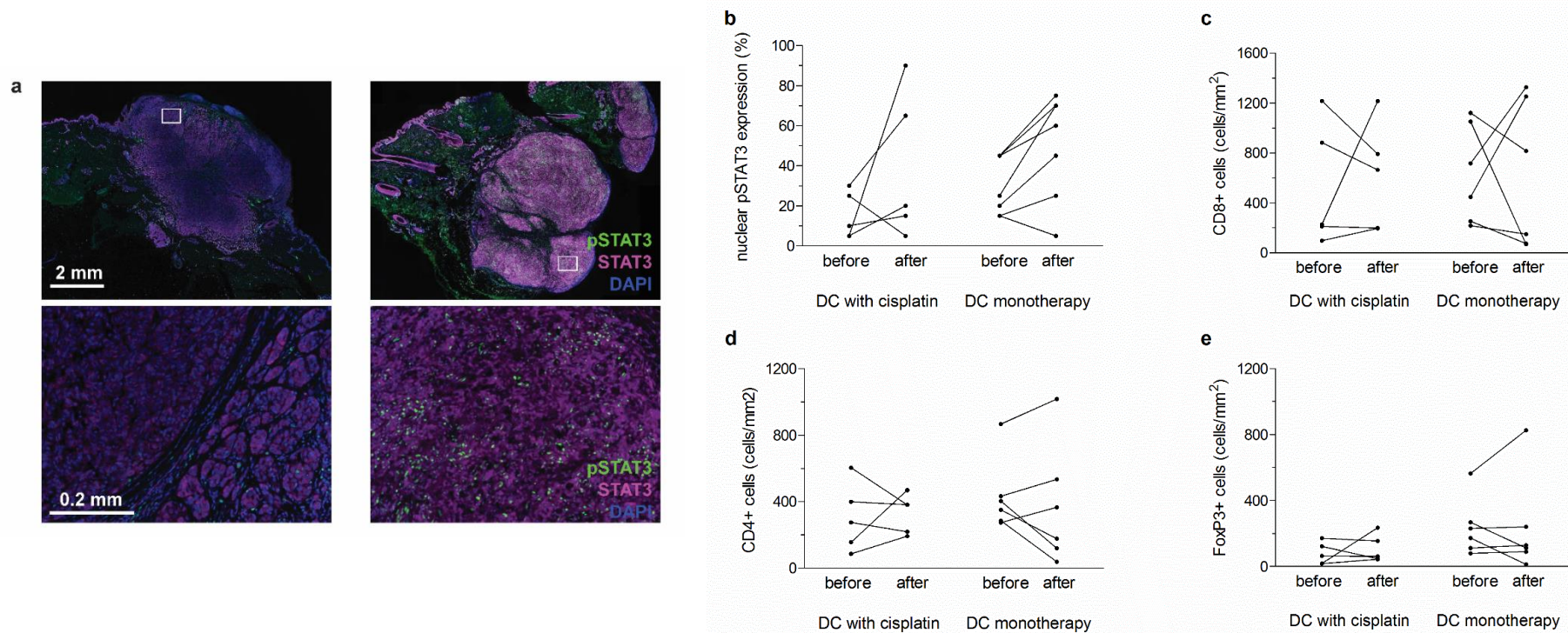


**Supplementary Figure 2** Flowchart of all randomized stage III and stage IV melanoma patients



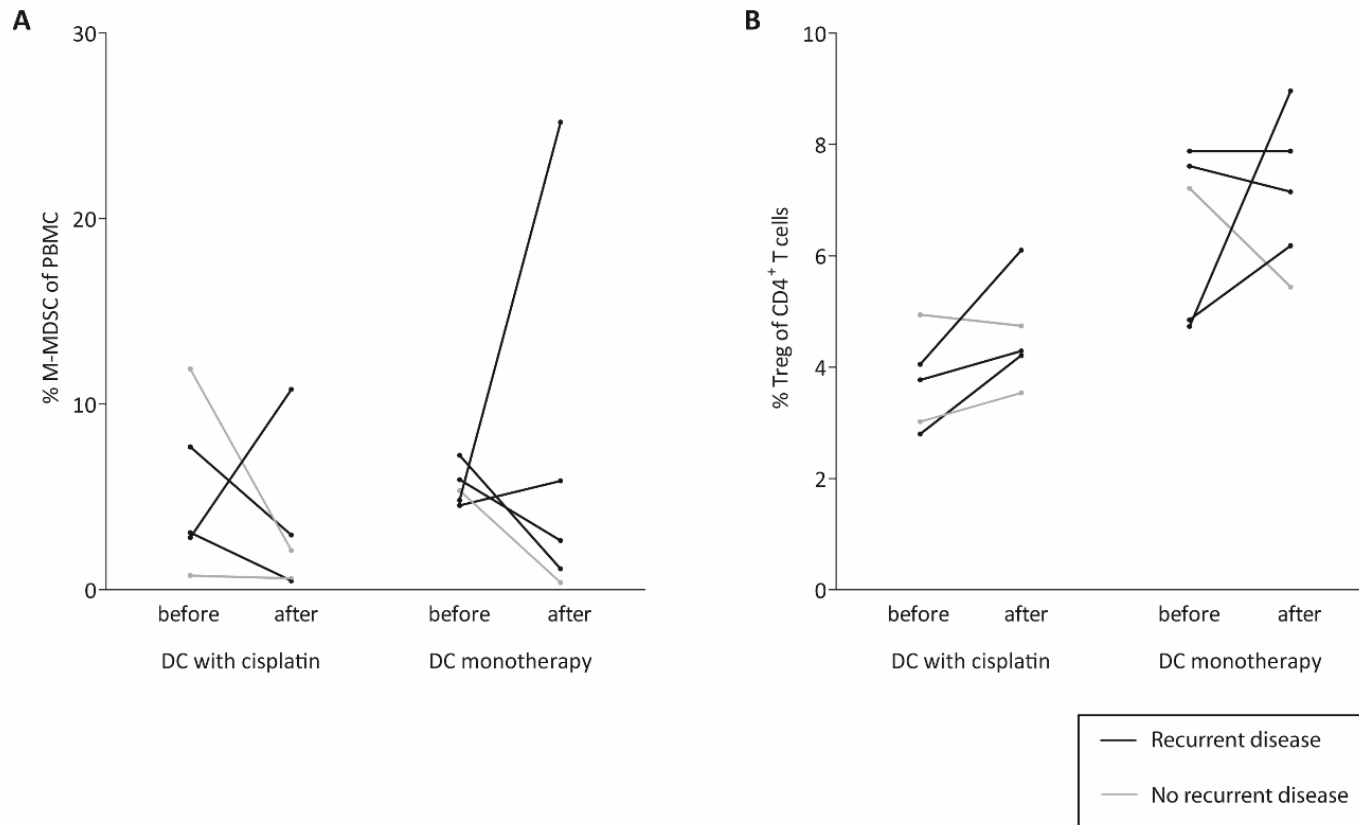
### Supplementary Figure 3 Vaccine characteristics

Expression patterns of the *ex vivo* generated dendritic cells used in the first cycle. Shown are the percentages of dendritic cells expressing the (a) different phenotype markers and (b) tumor-associated antigens. The lines represent the median.



#### Supplementary Figure 4 pSTAT3 expression and infiltrate in melanoma tissue

Analyzed prior to and after experimental therapy. **(a)** Representative image of pSTAT3 staining by multiplex immunohistochemistry of low (**left**) and high (**right**). **(b)** Expression of nuclear pSTAT3. Analysis of lymphocyte infiltrate with absolute numbers of **(c)** CD8<sup>+</sup>, **(d)** CD4<sup>+</sup> cells and **(e)** FoxP3<sup>+</sup> cells per mm<sup>2</sup>.



**Supplementary Figure 5** Monocytic myeloid-derived suppressor cells (M-MDSCs) and regulatory T cells (Tregs) in peripheral blood. Peripheral blood mononuclear cells (PBMCs) were collected prior to the apheresis (start of study) and one week after the third vaccination. (a) percentage of M-MDSCs (HLA-DR<sup>+</sup>CD14<sup>+</sup>CD11b<sup>+</sup>CD33<sup>+</sup>) of live PBMCs and (b) the percentage of Tregs of CD4<sup>+</sup> T cells was determined for stage III patients treated with DC vaccination with or without concomitant cisplatin.