Author Correction: CIS is a potent checkpoint in NK cell–mediated tumor immunity

Correction to: *Nature Immunology* https://doi.org/10.1038/ni.3470, published online 23 May 2016.

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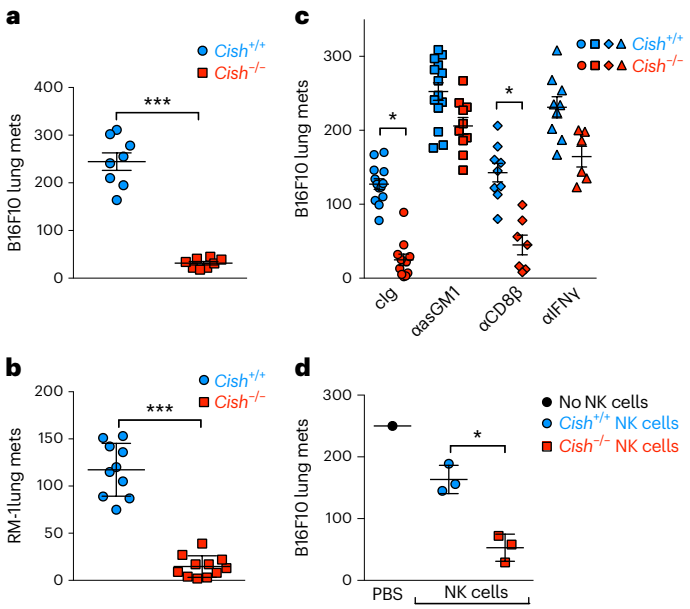
The Chief Editor is correcting this article at the request of the corresponding authors Sandra Nicholson and Nicholas Huntington. An investigation by QIMR Berghofer Medical Research Institute found that Figures 7b and 7f were based on experiments for which no evidence of their conduct or primary data could be confirmed. As such, the data from the underlying experiments is believed to have been fabricated or is unreliable, respectively. These two panels have been removed from Figure 7 (see below). The major finding of the paper, that *Cish* deficiency improves anti-tumor immunity, remains unaffected. In addition, the legend and methods related to Figure 7d were partly incorrect and have now been changed to fully capture antibody injection and organ harvest times (see list of edits below). No concerns have been raised regarding other data in the paper.

Due to the age of the paper, the original article is no longer able to be edited in situ. The following replacement figure, legend and text edits represent the revised version of the article.



Revised Figure 7 | Loss of CIS checkpoint induction in NK cells reduces experimental lung metastasis. (**a**, **b**) Metastatic burden (vertical axis) in the lungs of *Cish*$^{+/+}$ and *Cish*$^{-/-}$ mice 14 d following i.v injection of **(a)** B16F10 melanoma cells, and **(b)** RM-1 prostate carcinoma cells. (**c**) Metastatic burden (vertical axis) in the lungs of *Cish*$^{+/+}$ and *Cish*$^{-/-}$ mice treated with either cIg, anti-CD8 (αCD8; CD8^{+} T cell depletion), anti-asialoGM1 (αasGM1; NK cell depletion) or anti-IFN-γ (αIFN-γ) antibodies on days −1, 0 and day 6 or 7, relative to B16F10 melanoma injection. Data are derived from two experiments 12 or 14 d following i.v. injection of B16F10 melanoma cells. (**d**) Metastatic burden (vertical axis) in the lungs of NK cell–deficient (*Ncr1*$^{Mcl1\Delta/\Delta}$) mice injected with B16F10 melanoma cells and either *Cish*$^{+/+}$ or *Cish*$^{-/-}$ NK cells or PBS. (**a**–**d**, mean and s.e.m. of indicated *n*). *$P > 0.05$ and ***$P > 0.0001$ (Mann-Whitney *U* test (**a**–**c**) or unpaired Student's *t* test (**d**) (also see Supplementary Fig. 7)).

Figure 7 legend, remove: "LWT1 (B-RAF mutant) melanoma (**b**)" and "(**f**) Metastatic burden (vertical axis) in the lungs of *Cish*$^{+/+}$ and *Cish*$^{-/-}$ mice 13 d following B16F10 melanoma injection. On days 0, 3 and 6 relative to tumor inoculation, mice received either control Ig or combination anti–PD-1 and anti–CTLA-4 antibodies."

Figure 7 legend, edit to read: "(**a, b**)" and "(**a**–**d**, mean and s.e.m. … of indicated *n*). **P* > 0.05 and ****P* > 0.0001 (Mann-Witney *U* test (**a**–**c**) or unpaired Student's *t* test (**d**)", and "(**c**) …. antibodies on days –1, 0 and days 6 or 7 relative to B16F10 melanoma injection."

Page 821, right-hand column, remove: "Injection of *Cish*$^{+/+}$ and *Cish*$^{-/-}$ mice with a melanoma cell line expressing a mutated form of the serine-threonine kinase *braf* (LWT1 BRAF^{V600E})[23] also resulted in significantly reduced lung metastases in *Cish*$^{-/-}$ mice (**Fig. 7b**)."

Page 821, 822, remove: "Combination immunotherapy using antibodies to PD-1 and CTLA4 is currently one of the most effective treatments against advanced melanoma[24,25]. To compare this benchmark immunotherapy with *Cish* deletion, we injected *Cish*$^{+/+}$ and *Cish*$^{-/-}$ mice with a high dose of B16F10 melanoma (to elicit both an NK cell and CD8$^+$ T cell response) and treated them with a cIg or a combination of anti-PD-1 and anti–CTLA-4. Anti–PD-1 and anti–CTLA-4 treatment significantly reduced melanoma metastases when compared with cIg in Cish$^{+/+}$ mice, but this was inferior to the protection afforded by Cish deletion alone (*Cish*$^{-/-}$ mice + cIg; **Fig. 7f**). Notably, *Cish*$^{-/-}$ mice treated with anti–PD-1 and anti–CTLA-4 developed even fewer metastases than *Cish*$^{-/-}$ mice treated with cIg (**Fig. 7f**), highlighting the potential therapeutic benefit that could be achieved if anti–CTLA-4 and anti–PD-1 therapy was combined with loss of CIS function."

Page 823, last Discussion paragraph, remove: "…and showing greater efficacy than that observed with CTLA-4–PD-1 blockade."

Online Methods, "Experimental tumor metastasis" section, replace as follows: "Single-cell suspensions of B16F10 melanoma or RM-1 prostate carcinoma cells were injected i.v. into the tail vein of the indicated strains of mice (2.0-2.5 × 10^5 cells/mouse). Some mice also received either control Ig (50 or 250 µg i.p.; cIg, 2A3), 100 µg anti-CD8β (53.5.8) to deplete CD8$^+$ T cells, 50 µg anti-asialoGM1 to deplete NK cells, or 250 µg anti-mIFN-γ (H22) to neutralize IFN-γ, as previously described[33,61], on days -1, 0 and either day 6 or day 7, relative to tumor inoculation (day 0). Lungs were harvested on day 12 or 14 and either fixed in Bouin's solution and B16F10 metastases counted[55], or analyzed for NK cell expansion by flow cytometry."

Further, Jeffrey J. Babon's first name was misspelled in the original article (Jeffery), as is now updated via this amendment.

Author Correction: Runx factors launch T cell and innate lymphoid programs via direct and gene network-based mechanisms

Correction to: *Nature Immunology*
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In the version of the article initially published, the title of Extended Data Fig. 9 was incorrect and has been updated to "Distinct associations of transcriptional regulatory function with different groups of Runx binding sites" in the HTML and PDF versions of the article.