Angewandte Corrigendum

Sterilizing Immunity against SARS-CoV-2 Infection in Mice by a Single-Shot and Lipid Amphiphile Imidazoquinoline TLR7/8 Agonist-Adjuvanted Recombinant Spike Protein Vaccine

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The authors wish to make the following corrections to this Research Article:
In Figure 1 and the table of content picture, the structure of the cholesteryl motif lacked a methyl group. The correct Figure 1 is shown below.

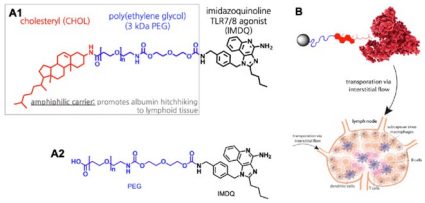

Figure 1. (A) Molecular structure of (A1) IMDQ-PEG-CHOL and (A2) IMDQ-PEG. Conjugation was performed by amide bond formation between respectively cholesterylamine and PEG and PEG and IMDQ. (B) Schematic representation of albumin hitchhiking-mediated lymphatic transportation.

The sentence "Furthermore, compared to IMDQ-PEG, IMDQ-PEG was more potent in inducing NF-kB activation in a reporter cell line (Figure 2 D), while being non-toxic within the tested experimental window (Figure 2 E)" should be replaced by "Furthermore, compared to IMDQ-PEG, IMDQ-PEG-CHOL was more potent in inducing NF-κB activation in a reporter cell line (Figure 2 D), while being non-toxic within the tested experimental window (Figure 2 E)".
The sentence: "Whereas non-immunized mice evidently did not show any detectable spike protein-specific titers in their sera, immunization with S protein induced Spike protein-specific titers in all groups (Figure 5 B), also shown as area under the curve (AUC) titers in Supplementary Figure 54" should be replaced by "Whereas non-immunized mice evidently did not show any detectable spike protein-specific titers in their sera, immunization with S protein induced Spike protein-specific titers in all groups (Figure 5 B), also shown as area under the curve (AUC) titers in Supplementary Figure S5".
In Figure 3 A the panels corresponding to the IMDQ-PEG-CHOL and IMDQ (but not IMDQ-PEG) groups were mistakenly copied from a previous manuscript of our group.[1] Note that in analogy to our findings in Ref. [1], conjugation of IMDQ to an amphiphilic lipid-polymer carrier, again appeared crucial for mediating lymphatic translocation as the non-amphiphilic IMDQ-PEG induced very limited activity in the draining lymph node. The correct Figure 3 is shown below.
In Figure 5, the panels A and B were mistakenly deleted in the original manuscript. The correct Figure 5 is shown below.
Figure S3 in the Supporting Information has been expanded with ROI (= region of interest) designation on the bioluminescence images and a table containing the individual photon flux values from the draining popliteal lymph node and the whole body of the animals. Note that the "quantification of the total photon flux from the draining popliteal lymph node and the whole body, and the ratio of both" was performed on the correct images, also in the original manuscript. A revised Supporting Information is available online along with this Corrigendum.

[1] J. De Vrieze, B. Louage, K. Deswarte, Z. Zhong, R. De Coen, S. Van Herck, L. Nuhn, C. Kaas Frich, A. N. Zelikin, S. Lienenklaus, N. N. Sanders, B. N. Lambrecht, S. A. David, B. G. De Geest, *Angew. Chem. Int. Ed.* **2019**, 58, 15390; *Angew. Chem.* **2019**, 131, 15535.

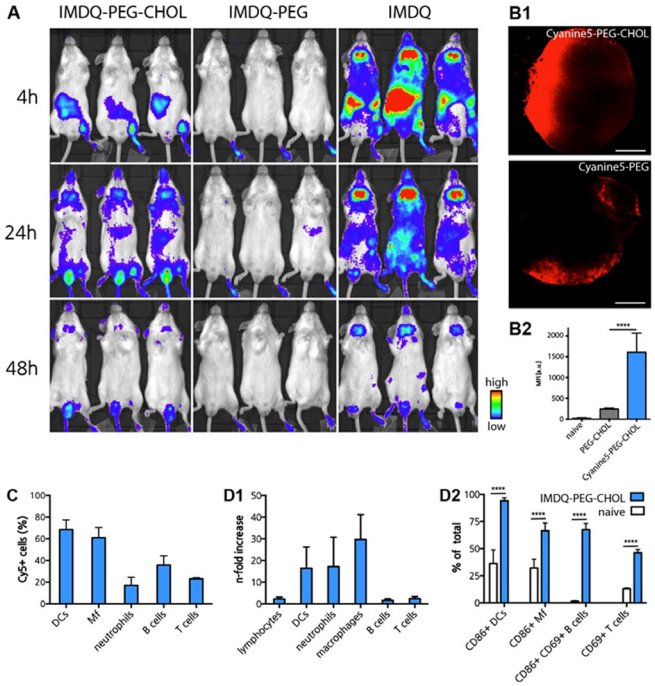

Figure 3. (A) Bioluminescence images of luciferase reporter mice (IFNβ + /Δβ-luc); images taken 4, 24 and 48 h post footpad injection of IMDQ-PEG-CHOL, IMDQ-PEG and native IMDQ. (B1) Confocal microscopy images of lymph node tissue sections 48 h post subcutaneous injection of Cyanine5-PEG-CHOL, respectively Cyanine5-PEG, into the footpad of mice. Scale bar represents 100 micron. (B2) Flow cytometry analysis of the draining popliteal lymph node 48 h post subcutaneous injection of Cyanine5-PEG-CHOL, respectively Cyanine5-PEG into the footpad of mice. (n = 3, mean + SD; Student's t-test: ****: $p < 0.0001$) (C) Translocation of Cyanine5-PEG-CHOL to the draining popliteal lymph node analyzed 24 h post injection into the footpad, measured by flow cytometry. (n = 6, mean + SD) (D) Flow cytometry analysis of the innate immune response in the draining popliteal lymph node 24 h post injection of IMDQ-PEG-CHOL into the footpad (D1) Relative increase in innate immune cell subsets, B and T cell numbers relative to a naïve control and (D2) maturation/activation of innate immune cell subsets, B and T cells (n = 6, mean + SD; Student's t-test: ****: $p < 0.0001$).

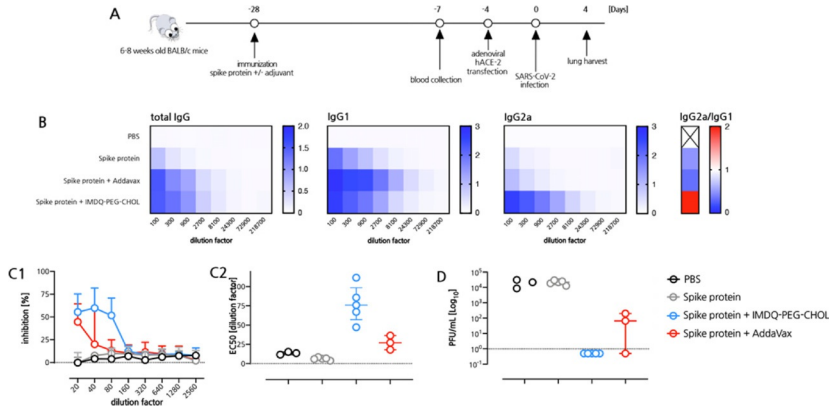

Figure 5. IMDQ-PEG-CHOL induces a balanced neutralizing antibody response to SARS-CoV-2 infection. (A) Outline of the Spike protein vaccination and SARS-CoV-2 challenge. (B) ELISA titers (titers are expressed on the X axis as the reciprocal of the dilution factor) for total IgG, IgG1 and IgG2a and IgG2a/IgG1 ratio (based on the AUC (OD at 450nm) curve of the individual serum samples) in mice sera collected 3 weeks post-vaccination. (C) Control versus vaccinated sera examined for presence of virus-neutralizing antibodies by microneutralization assay, using 100 tissue culture infectious dose 50 (TCID50) of SARS-CoV-2 virus. The outcome is represented as a percentage inhibition of viral growth in (C1) and as the half maximal inhibitory concentration IC50 calculated by a non-linear regression analysis of percentage inhibition curve in (C2). (D) Viral lung titers represented as Plaque-forming-unit (PFU)/mL (geometric mean with geometric SD). The Ad5-hACE2 transduced mice were challenged with 5x104 PFU of SARS-CoV-2 and the lungs were harvested on day-4 post infection.