Post-hoc Analysis of Clinically Relevant Anti-vaccine Antibodies in Participants Treated With Nipocalimab

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Disclosures

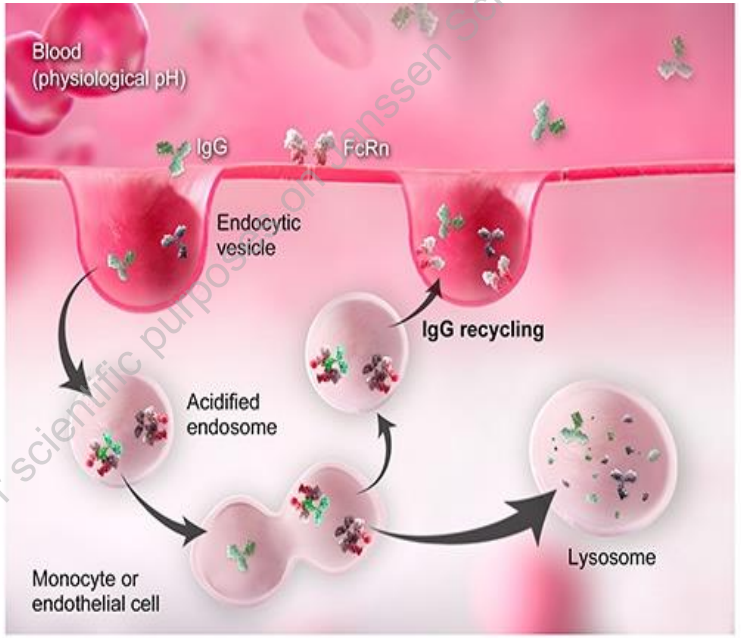
- **FY**, **EM**, **CBM**, **MC**, **KF**, **QW**, **MJL**, **DD**, and **SG** are employees of Janssen Research & Development, LLC and may hold stock in Johnson & Johnson

Study objective and background

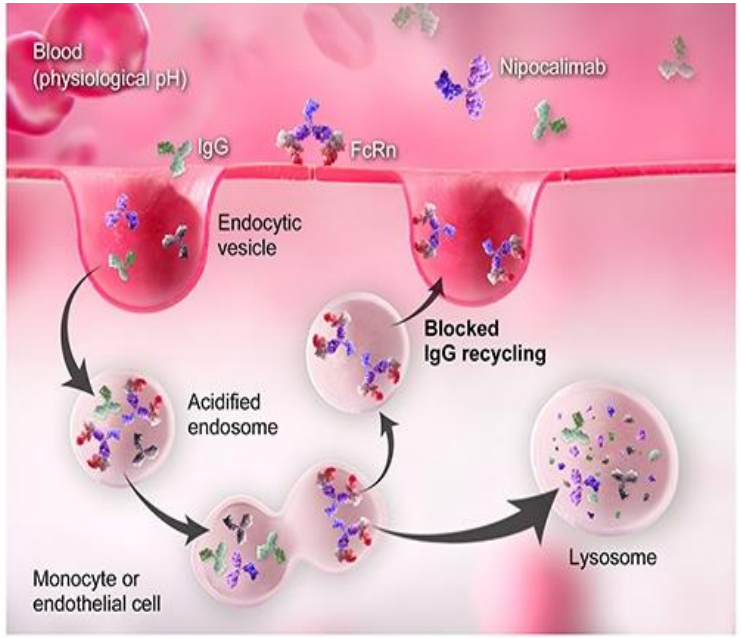
To assess the impact of nipocalimab on pre-existing clinically relevant anti-vaccine antibodies and antibody response to SARS-CoV-2 vaccination and infection

- Nipocalimab, a fully human, high-affinity IgG1 monoclonal antibody, blocks FcRn to decrease levels of IgG including autoantibodies[1-4]
  - Does not affect IgG synthesis, antigen recognition, leukocyte proliferation, IgM or IgA response[5]

FcRn-mediated IgG recycling



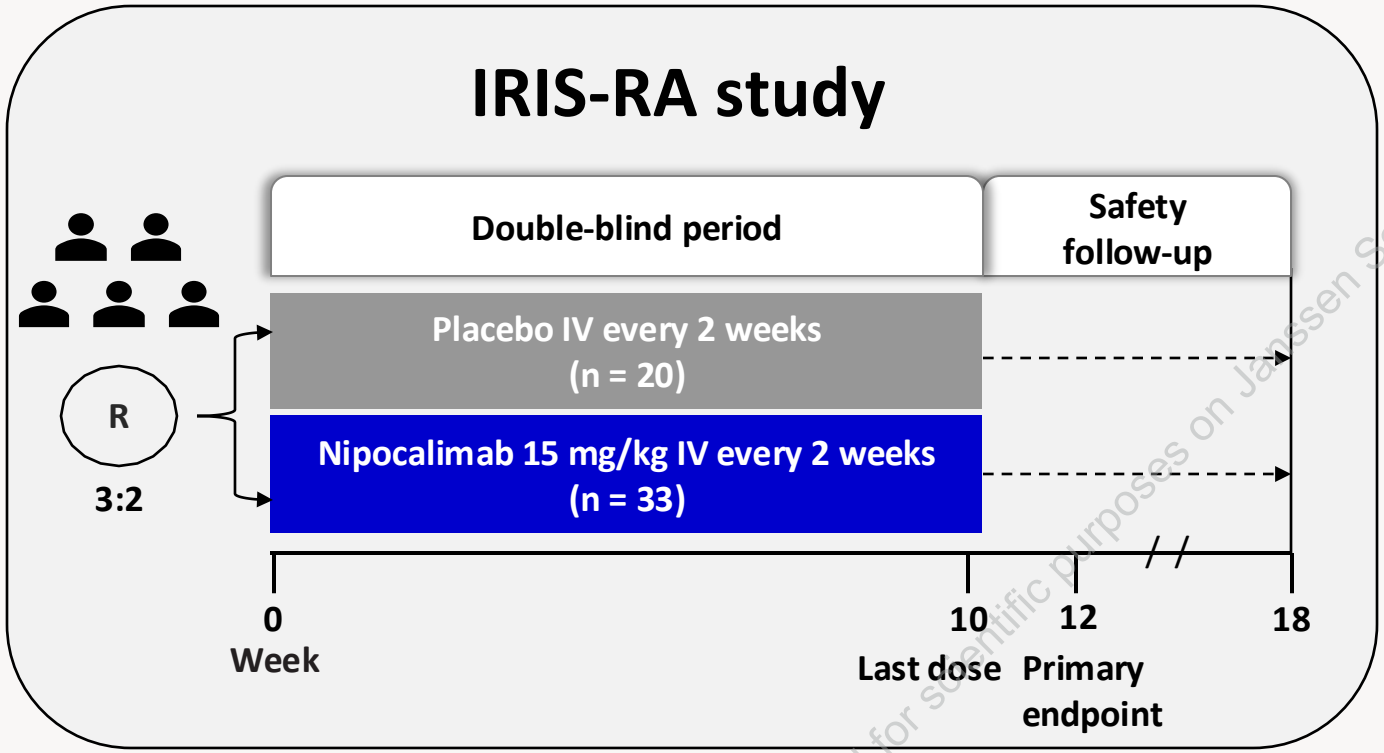
Nipocalimab in FcRn-mediated IgG recycling

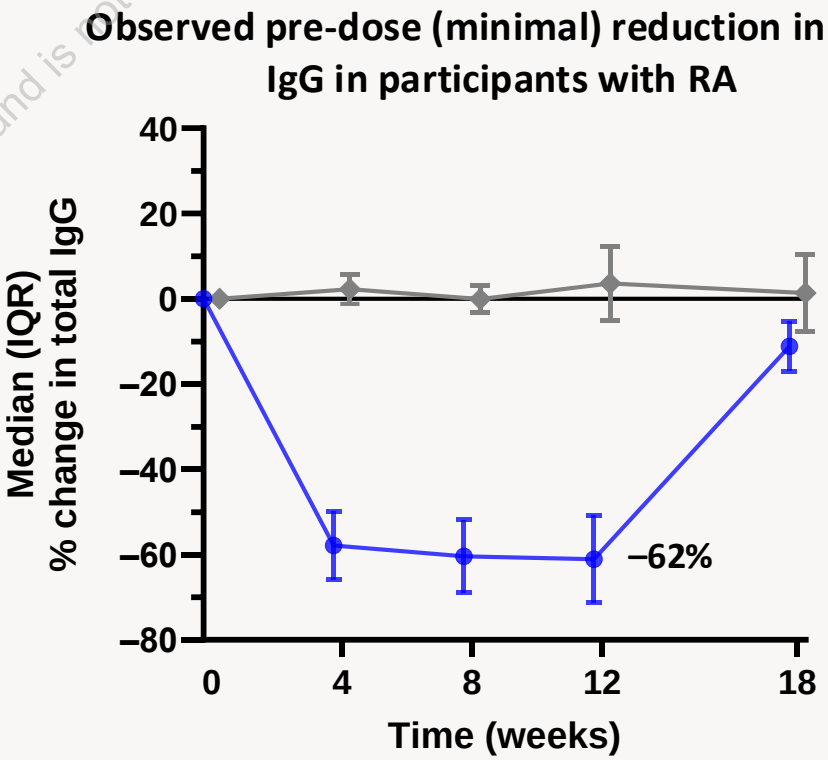


FcRn, neonatal crystallizable fragment receptor; IgA; immunoglobulin A; IgG, immunoglobulin G; IgM, immunoglobulin M; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

1. Ling LE, et al. *Clin Pharmacol Ther.* 2019;105(4):1031-1039. 2. Roy S, et al. *Am J Obstet Gynecol.* 2019;220(5):498e.1-498.e9. 3. Moise KJ Jr, et al. *N Engl J Med*. 2024;391(6):526-537.
4. Antozzi C, et al. *Neurology*. 2024;102(2):e207937. 5. Seth N, et al. Presented at: American Academy of Neurology (AAN) Annual Meeting; April 13-18, 2024; Online & Denver, CO, USA.

Nipocalimab treatment significantly and reversibly reduced total IgG levels in participants with RA in the IRIS-RA study





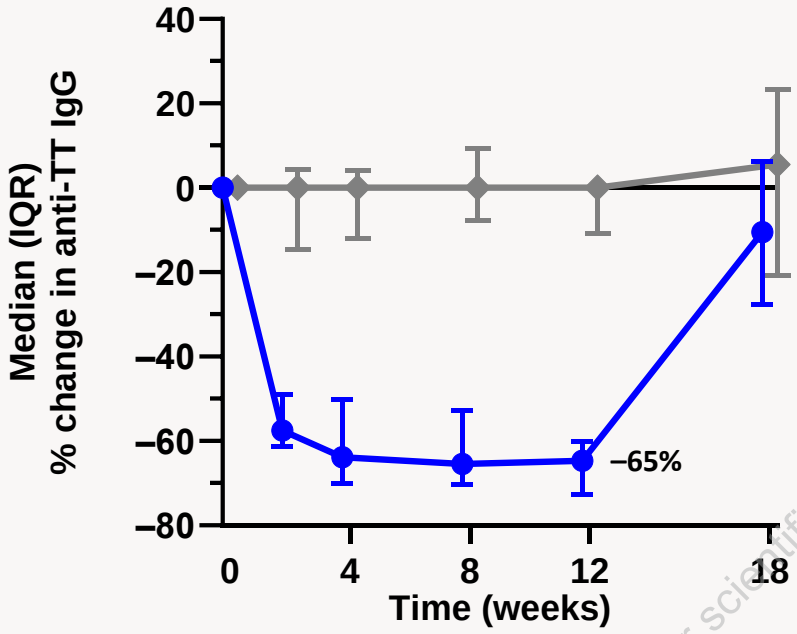
- Based on PK/PD modeling–based simulations for 15 mg/kg IV nipocalimab administered every 2 weeks, median steady-state IgG reduction was predicted to be a maximum of 75% with a pre-dose (trough) of 64.5%[1]

IgG, immunoglobulin G; IQR, interquartile range; IV, intravenous; PK/PD, pharmacokinetic/pharmacodynamic; R, randomization; RA, rheumatoid arthritis.

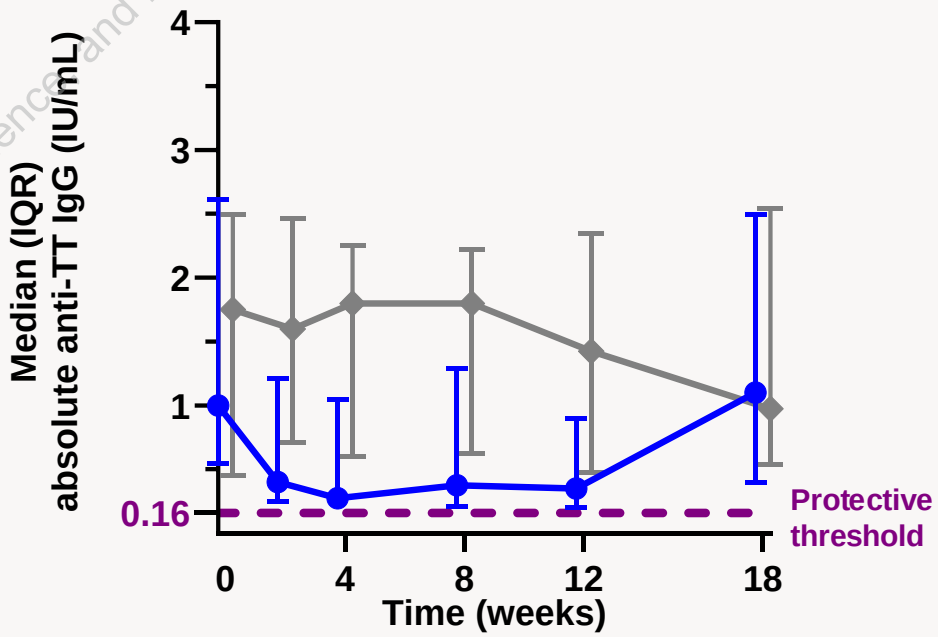
1. Taylor PC, et al. *RMD Open*. 2024;10(2):e004278.

The majority of patients remained protected during study, despite nipocalimab reducing pre-existing anti-tetanus IgG

Nipocalimab reduced anti-TT IgG levels to a similar extent as total IgG levels



The majority of participants maintained anti-TT IgG levels above protective threshold



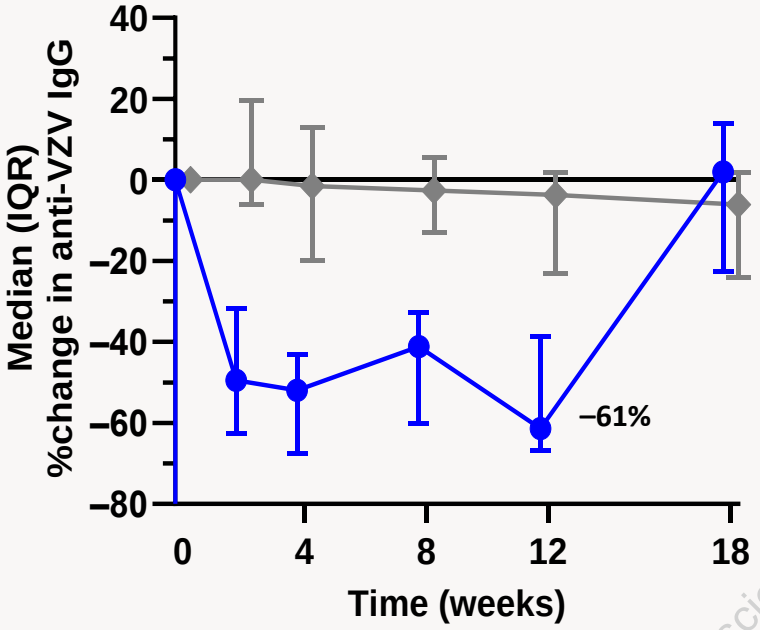
Nipocalimab Placebo

Treatment group	Total participants, N	Participants with anti-TT IgG levels above protective threshold (0.16 IU/mL), n/N (%)			
		Baseline/Week 0	Week 12	Week 18	All time points
Nipocalimab	28	27	20/25 (80)	24/26 (92)	19/27 (70)
Placebo	16	14	14/14 (100)	14/14 (100)	14/14 (100)

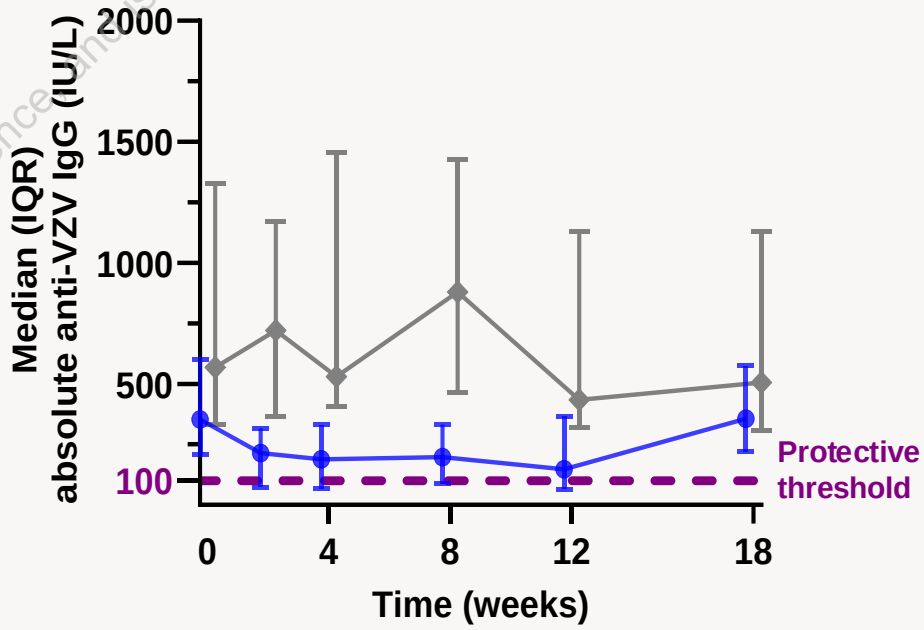
IgG, immunoglobulin G; IQR, interquartile range; IU, international unit; TT, tetanus toxoid.

The majority of patients remained protected during study, despite nipocalimab reducing pre-existing anti-varicella IgG

Nipocalimab reduced anti-VZV IgG levels to a similar extent as total IgG levels



The majority of participants maintained anti-VZV IgG levels above protective threshold



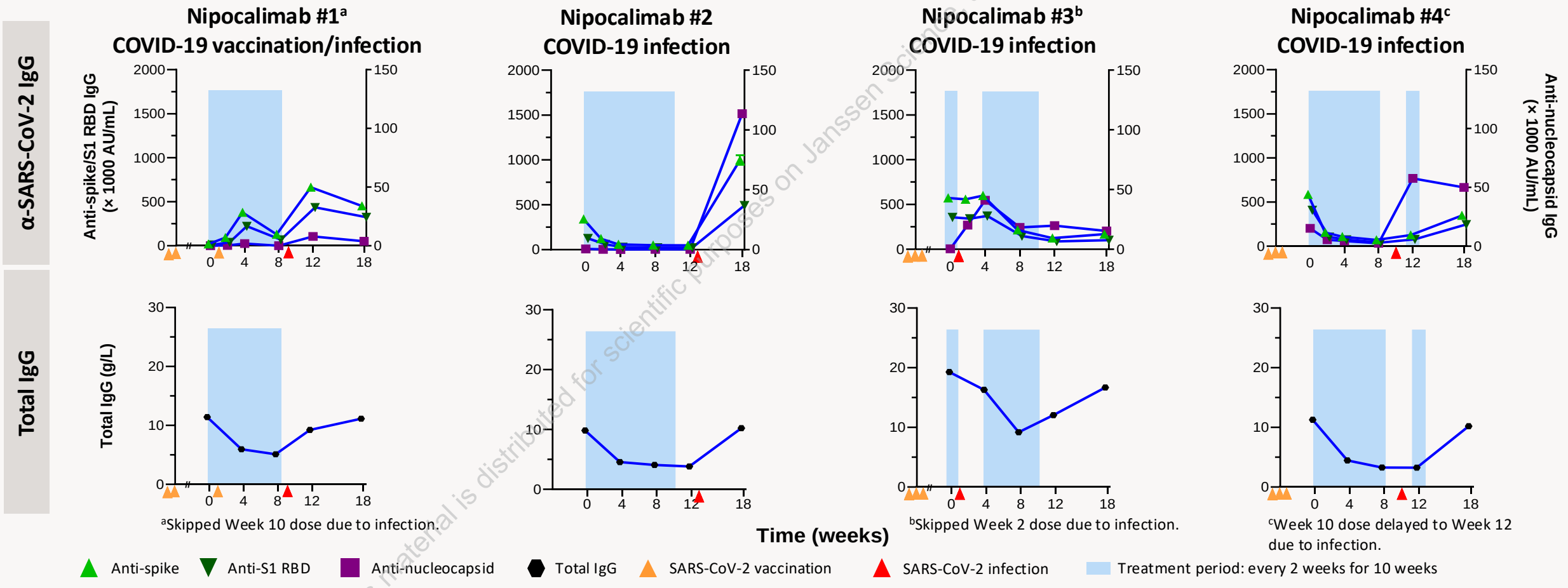
Nipocalimab Placebo

Treatment group	Total participants, N	Participants with anti-VZV IgG levels above protective threshold (≥100 IU/L), n/N (%)			
		Baseline/Week 0	Week 12	Week 18	All time points
Nipocalimab	28	25	14/22 (64)	21/23 (91)	14/25 (56)
Placebo	17	17	15/15 (100)	17/17 (100)	17/17 (100)

IgG, immunoglobulin G; IQR, interquartile range; IU, international unit; VZV, varicella zosters virus.

Nipocalimab-treated participants are able to mount IgG response to SARS-CoV-2 infection

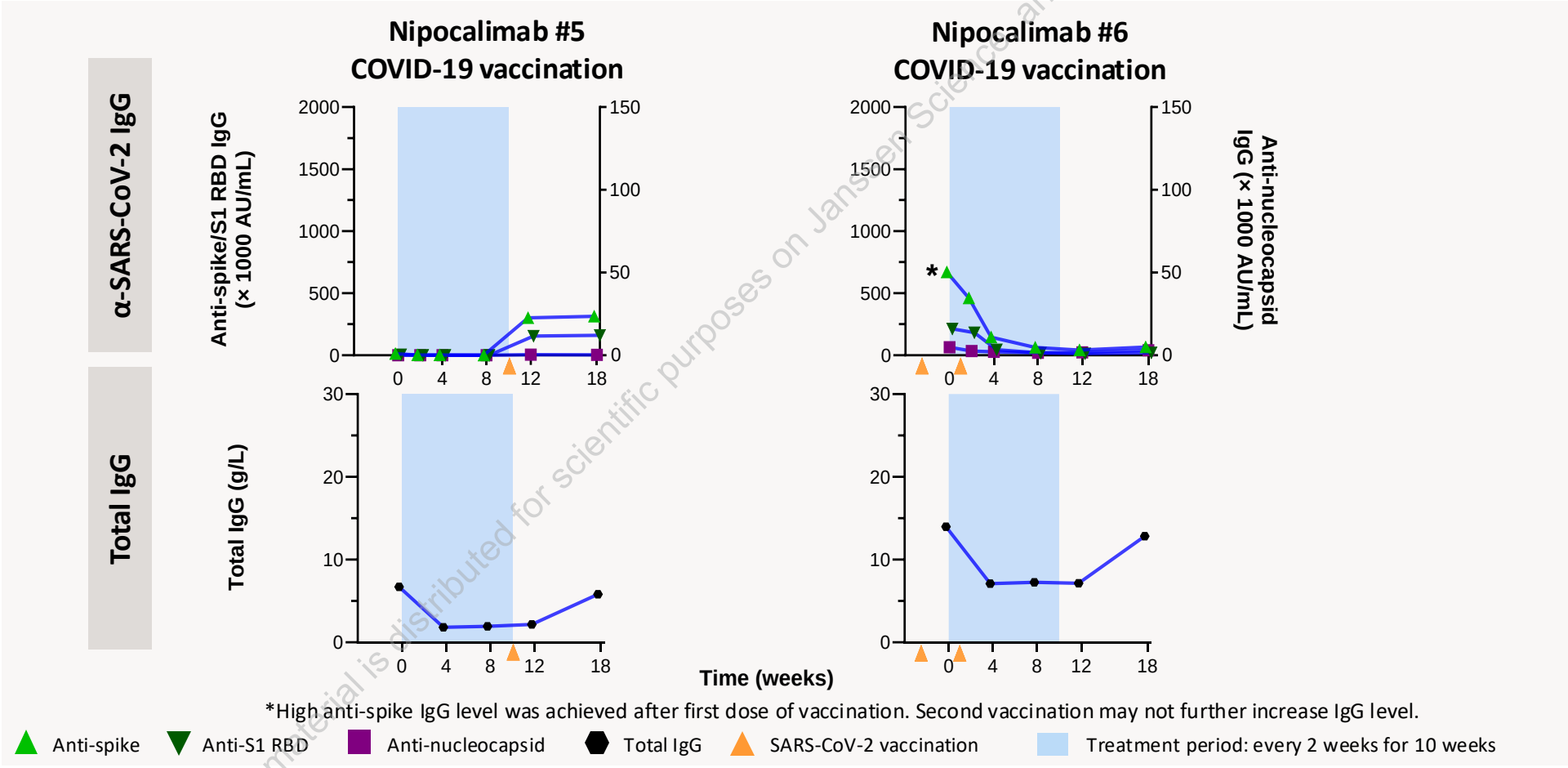
- Participants with SARS-CoV-2 infection during nipocalimab treatment mounted IgG responses against spike protein, S1 RBD, and nucleocapsid
- Of the 4 patients with RA who developed SARS-CoV-2 infections during the study, 3 had mild infections, and 1 had a moderate infection. All resolved without complications



AU, arbitrary unit; COVID-19, coronavirus disease 2019; IgG, immunoglobulin G; RA, rheumatoid arthritis; S1 RBD, spike protein S1 receptor-binding domain; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

Nipocalimab-treated participants are able to mount IgG response to SARS-CoV-2 vaccination

- Clinical experience in COVID-19 suggests that antibody responses to SARS-CoV-2 vaccination and infection are variable in magnitude and duration
- 2 patients with RA who received SARS-CoV-2 vaccination during nipocalimab treatment elicited IgG responses against spike protein and S1 RBD only; no SARS-CoV-2 infection was reported for these patients



AU, arbitrary unit; COVID-19, coronavirus disease 2019; IgG, immunoglobulin G; RA, rheumatoid arthritis; S1 RBD, spike protein S1 receptor-binding domain; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

Key takeaways

- Patients treated with nipocalimab elicited **IgG responses to SARS-CoV-2 vaccination and/or infection**
- Nipocalimab reduced pre-existing anti-vaccine antibodies to a **similar extent to total IgG**, consistent with the mechanism of action of nipocalimab
- The majority of patients treated with nipocalimab who were immune to TT and VZV at baseline **maintained protective IgG levels** during and after treatment
- Total and vaccine-specific **IgG returned to baseline levels** after treatment cessation

Results suggest that participants treated with nipocalimab:

- ✓ Can maintain protective IgG levels to clinically relevant pathogens
- ✓ Can mount IgG responses to infection and vaccination
- ✓ Can follow recommended vaccination schedules

IgG, immunoglobulin G; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; TT, tetanus toxoid; VZV, varicella zosters virus.

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- Please see Poster #MG25: A randomized, open-label study on the effect of nipocalimab on vaccine responses in healthy participants
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