The Therapeutic HSV-2 Vaccine GEN-003 Elicits Increased Humoral Responses in Seropositive Subjects

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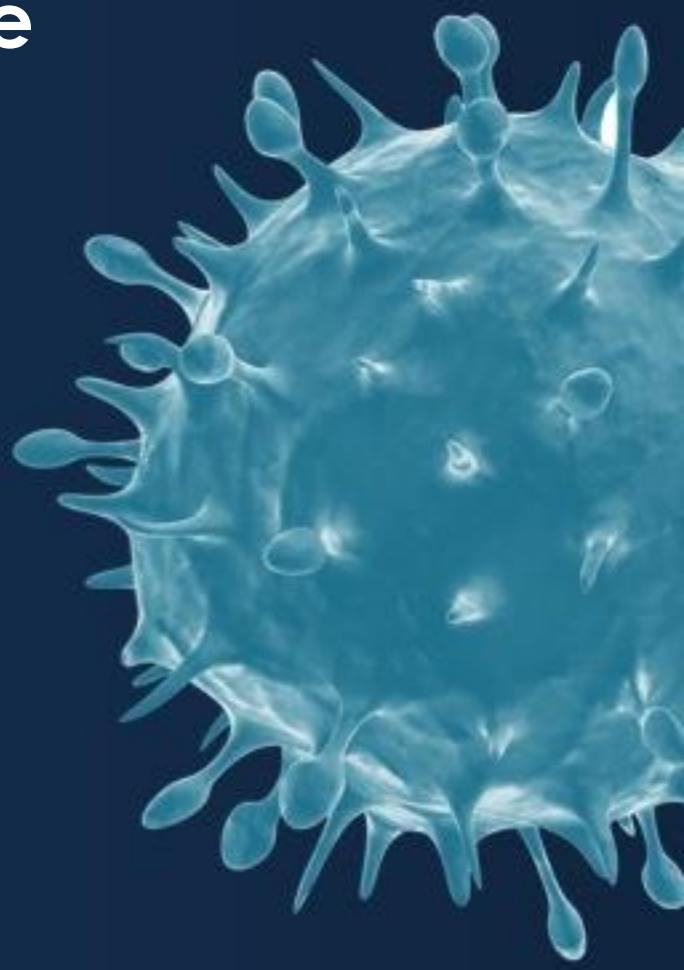
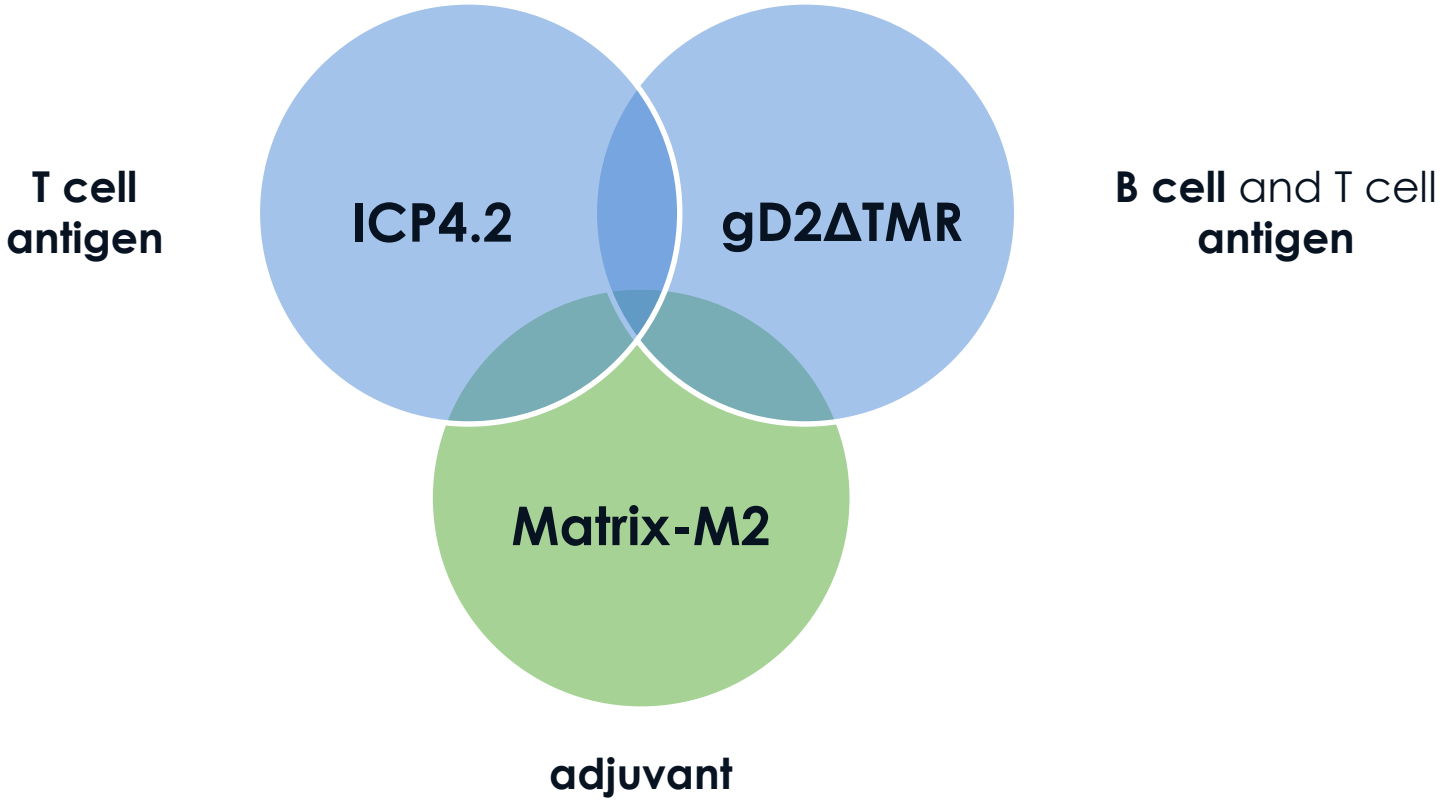


genocea BIOSCIENCES

* Contributed equally

GEN-003: A therapeutic vaccine for genital herpes

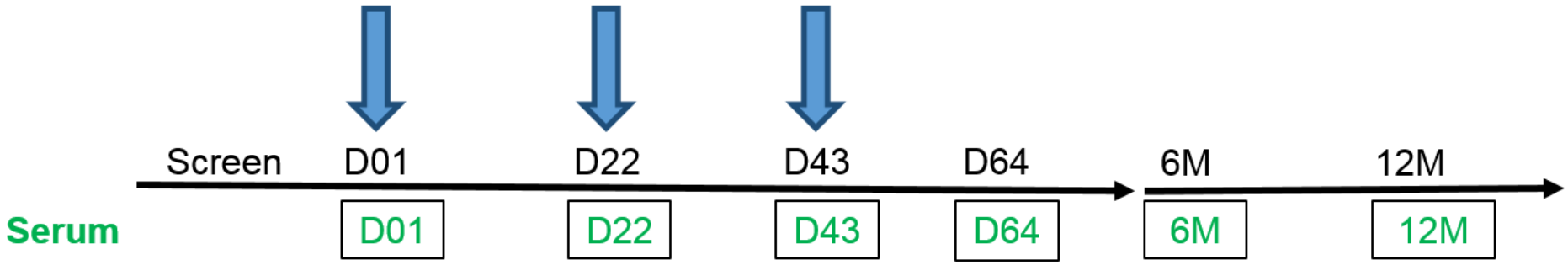
- GEN-003 Antigens were identified using the ATLAS™ T cell screening platform*.
- Matrix-M2 is a novel adjuvant from Novavax.



* Long, D *et al*. (2014) Virology 464-465: 296-311.

GEN-003-002 study design

- Randomized, double-blind, factorial study
- 315 subjects with recurrent genital HSV-2 infection
- Compared safety and efficacy of varying combinations of antigens and Matrix-M2:
  - Two antigen doses: 30 and 60 µg
  - Three Matrix-M2 doses: 25, 50, and 75 µg.

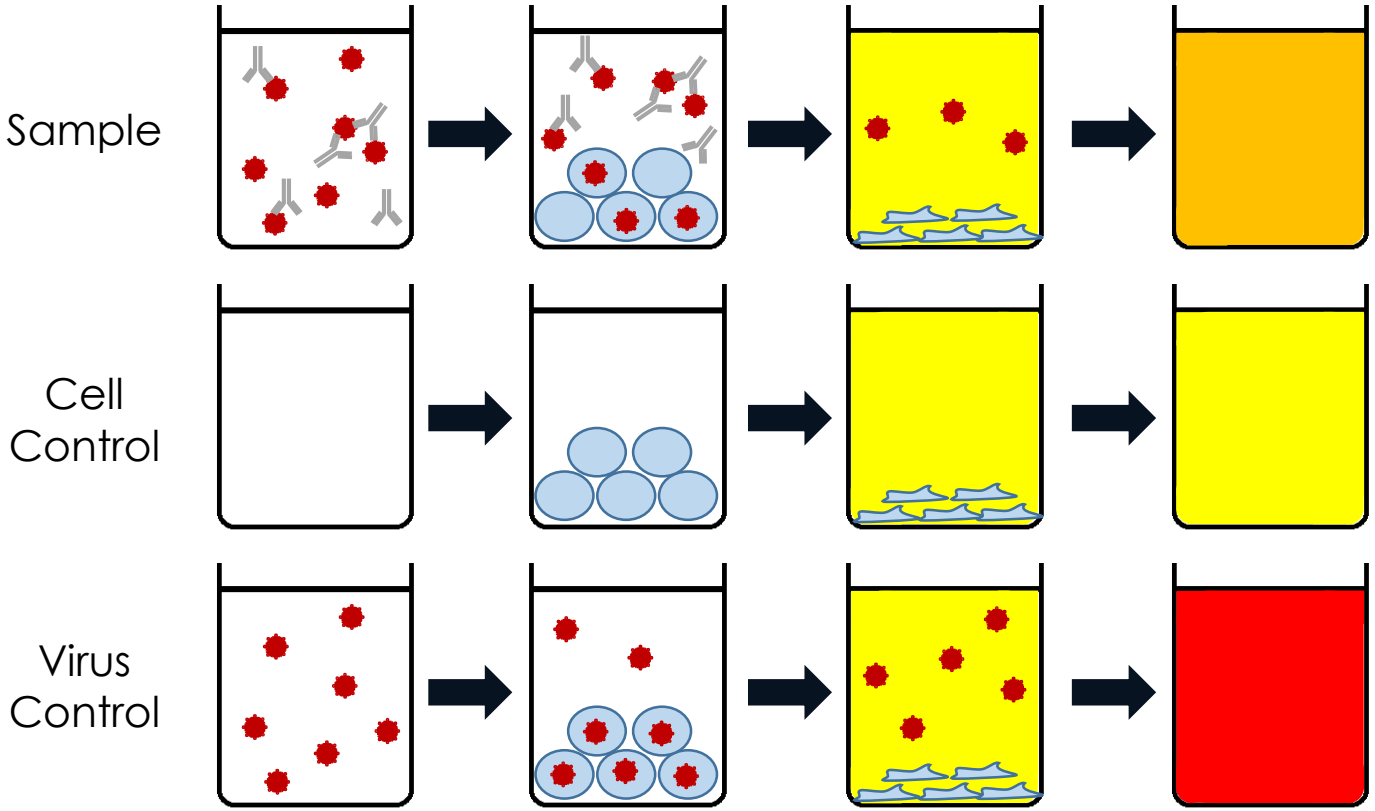


GEN-003-002 results summary

- The vaccine was well tolerated, with transient, self-limiting reactogenicity in all GEN-003 treatment arms
- GEN-003 demonstrated significant, clinically meaningful and durable effects on viral shedding and recurrence rates for up to 12 months
- -The antigen/adjuvant combinations of 60/50 µg and 60/75 µg produced the most consistent and durable reductions in viral shedding

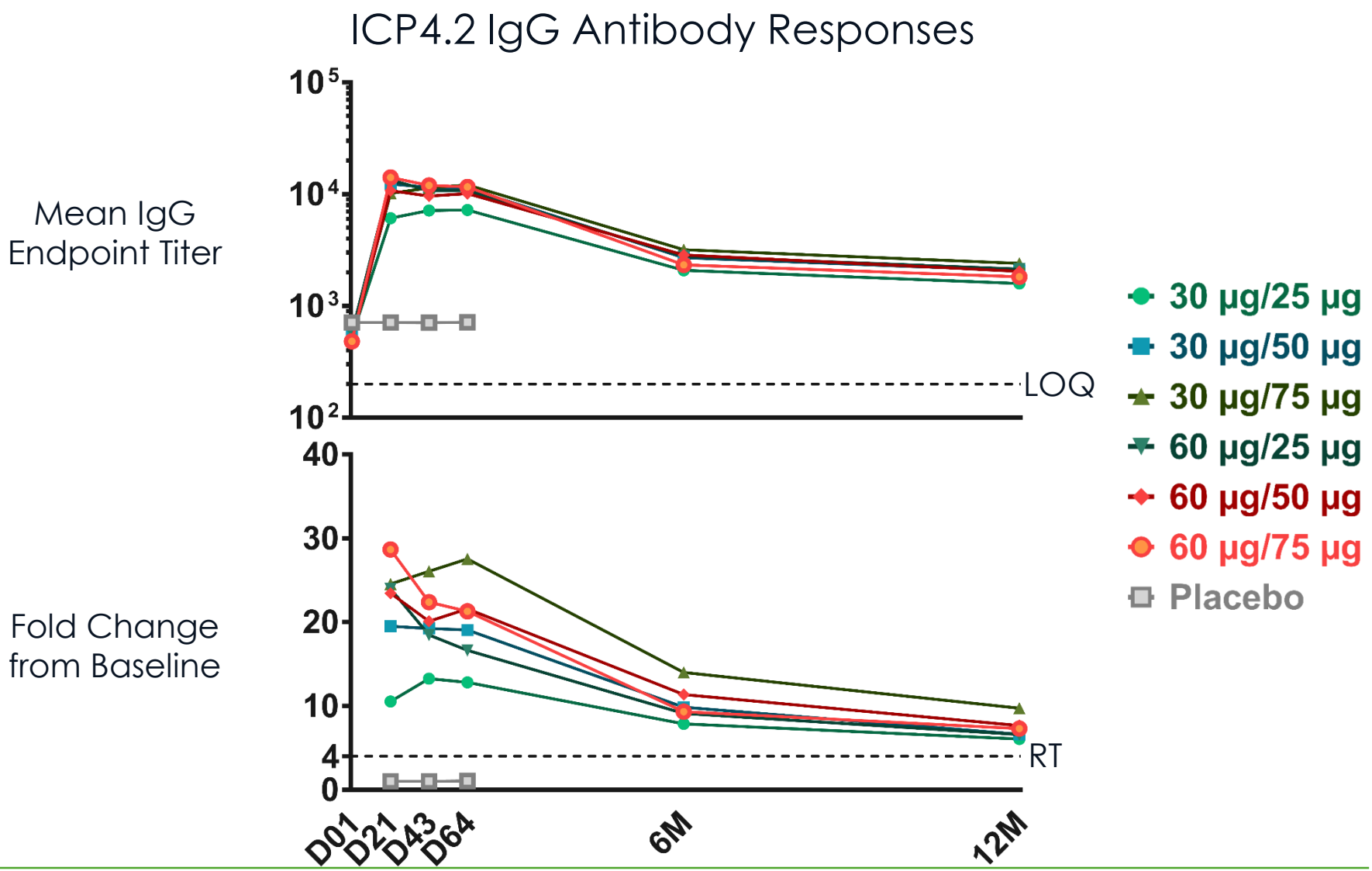
Methods for measuring humoral responses in sera

- **Antigen Specific Indirect ELISA**
  - Total IgG
  - Endpoint Titers
- **Colorimetric Neutralization Assay*:**



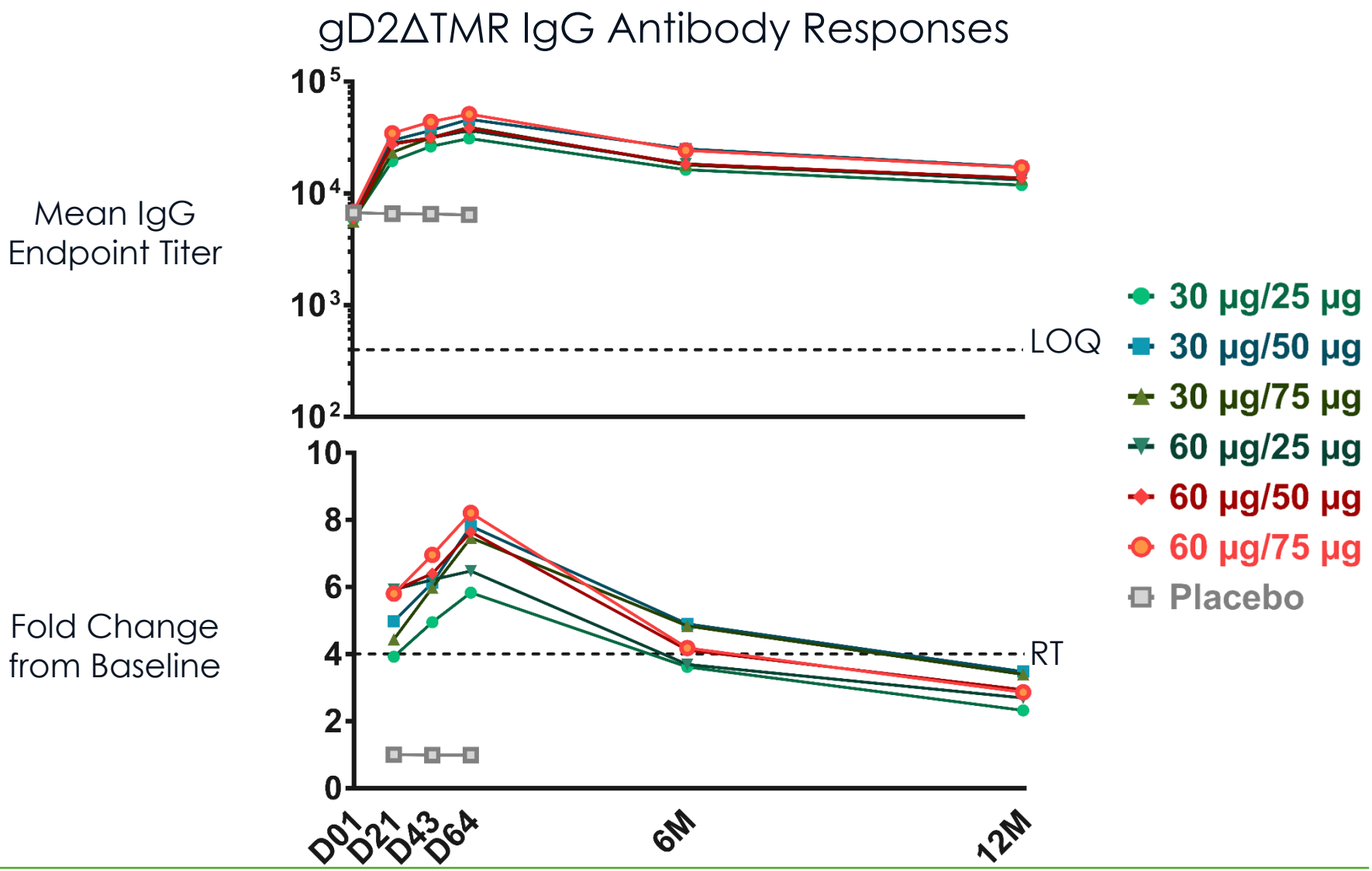
* Baccari, A. *et al. Vaccine, Vol 34, Issue 33, 19July 2016, pages 3901-3906*

GEN-003 induces durable and specific antibody responses



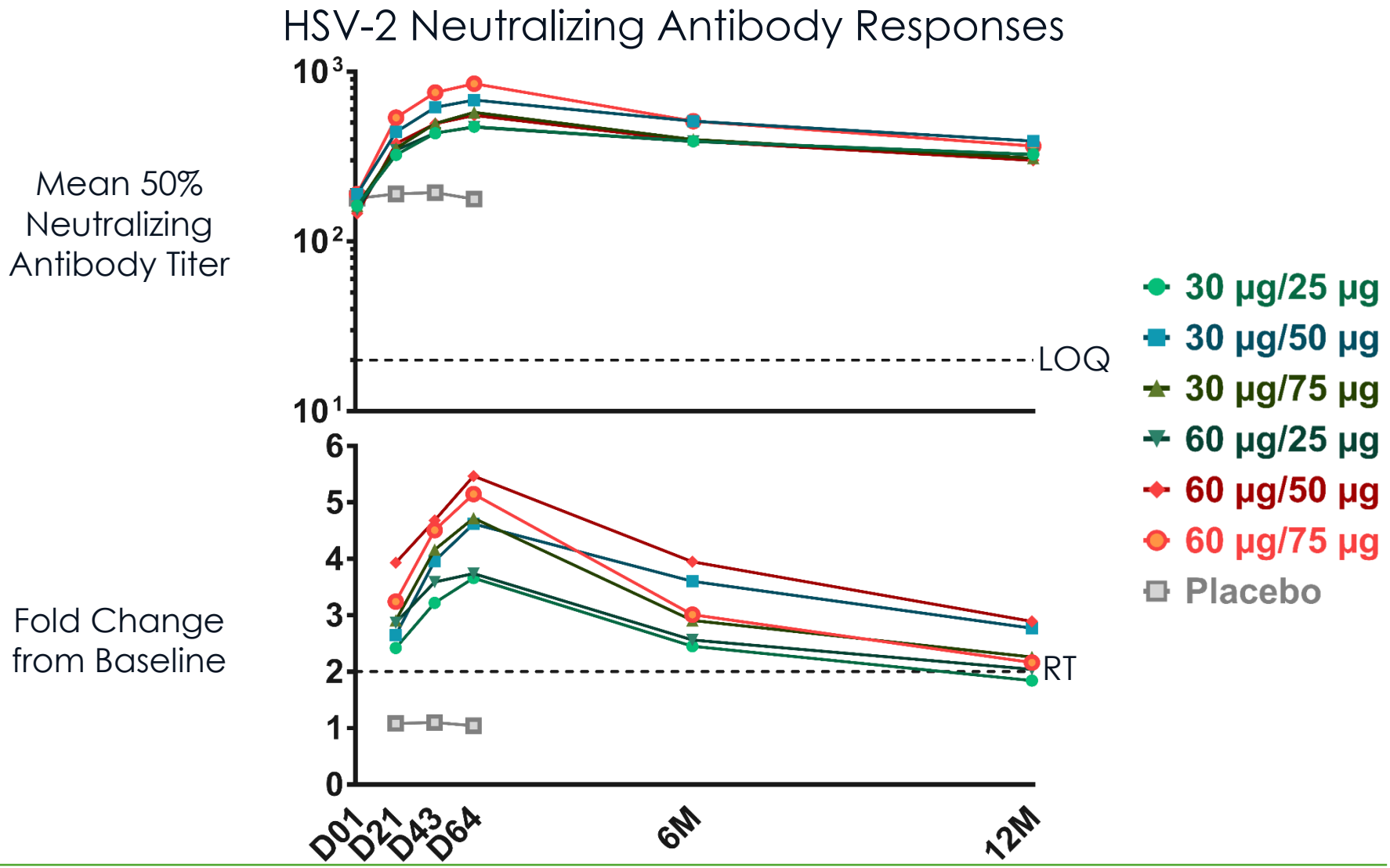
LOQ: Limit of Quantification **RT**: Responder Threshold

GEN-003 induces durable and specific antibody responses



LOQ: Limit of Quantification **RT**: Responder Threshold

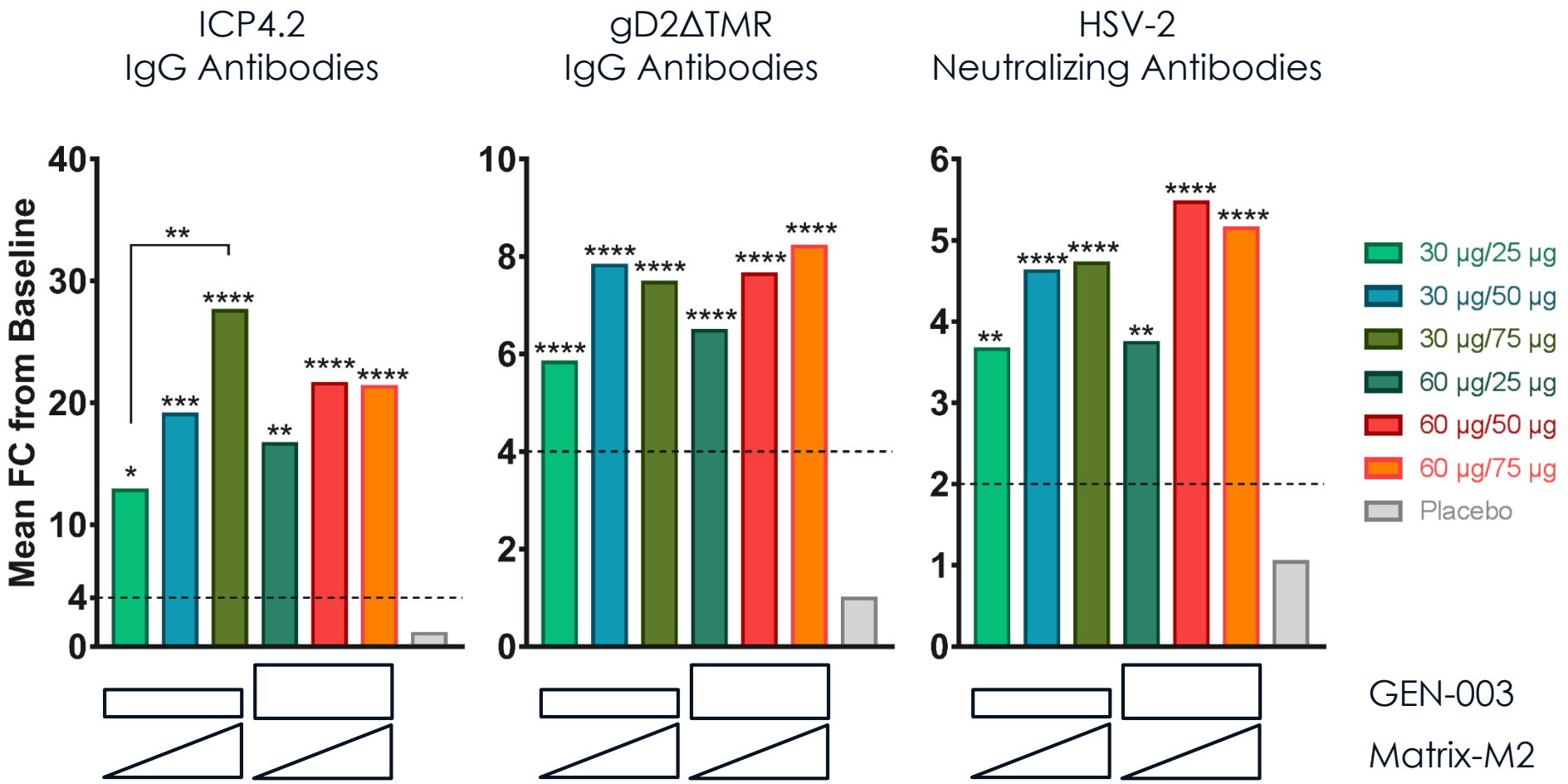
GEN-003 induces durable and functional antibody responses



GEN-003 dosing groups had high antibody response rates

	GEN-003 Antigens/Matrix-M2						
	30/25 (n=41)	30/50 (n=37)	30/75 (n=42)	60/25 (n=38)	60/50 (n=38)	60/75 (n=35)	Placebo (n=42)
ICP4.2	98%	100%	100%	100%	100%	100%	0%
gD2ΔTMR	66%	87%	76%	84%	82%	94%	0%
HSV-2 NAb	88%	89%	79%	95%	90%	97%	2%

GEN-003 dosing groups had high response rates



Tukey's multiple comparisons test compared placebo to test groups.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

Summary

- GEN-003 induced humoral immunogenicity at all dose combinations which remained elevated for at least one year
  - ICP4.2: All dose cohorts were responders at one year
  - gD2ΔTMR: 4/6 dose cohorts were responders at 6 months
  - NAb: 5/6 dose cohorts were responders at one year
- Humoral responses to GEN-003 were dependent on Matrix-M2 dose, especially at the lowest antigen dose
- We are currently evaluating the two highest doses in a randomized phase 2 clinical trial, (ClinicalTrials.gov Identifier NCT02515175)

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