Novel Pharmacokinetic Effects of POLARIS-101™, Solid Biosciences' Rationally Designed, Next-Generation Capsid

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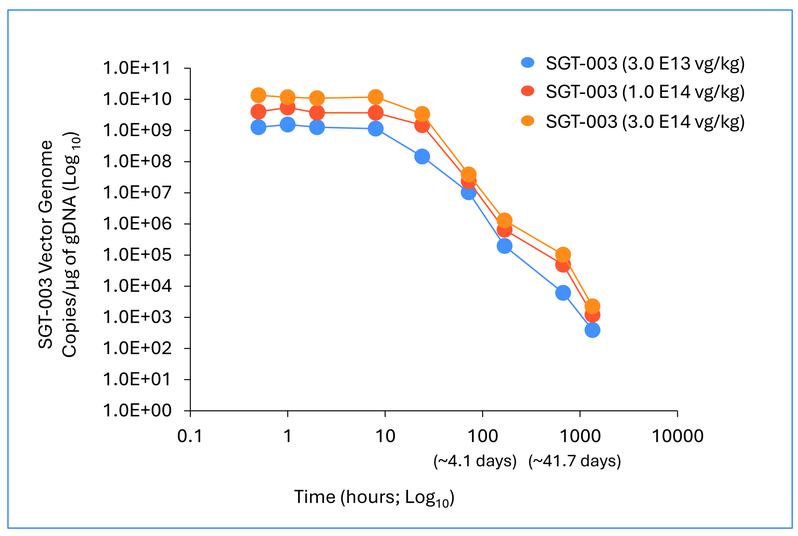
INTRODUCTION

- Adeno-associated virus (AAV) mediated gene therapy has emerged as a promising therapeutic for neuromuscular diseases; however, high systemic doses are required to achieve sufficient skeletal muscle and cardiac transduction
- POLARIS-101™ (formerly known as AAV-SLB101) was rationally designed as a vector with improved targeting capabilities to increase skeletal muscle and cardiac tropism through peptide insertions containing the RGD motif
- This capsid is under first-in-human clinical evaluation in the Phase 1/2 INSPIRE DUCHENNE trial (NCT06138639) and is also being evaluated in the Phase 3 IMPACT DUCHENNE trial (NCT07160634) of SGT-003, Solid Biosciences' investigational, next-generation gene therapy for Duchenne muscular dystrophy (Duchenne)
- To better understand the pharmacokinetic and pharmacodynamic effects of this novel capsid in comparison to first-generation capsids, a series of preclinical studies and early data from humans treated with SGT-003 were evaluated

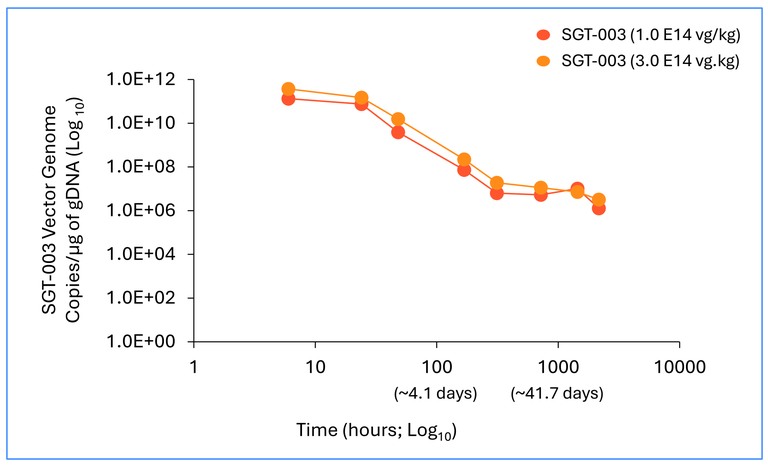
PRECLINICAL DATA INSIGHT INTO THE KINETICS OF POLARIS-101™ (AAV-SLB101)

Figure 1. Whole Blood Concentrations of SGT-003 Declined Rapidly Within Days in *mdx* Male Mice



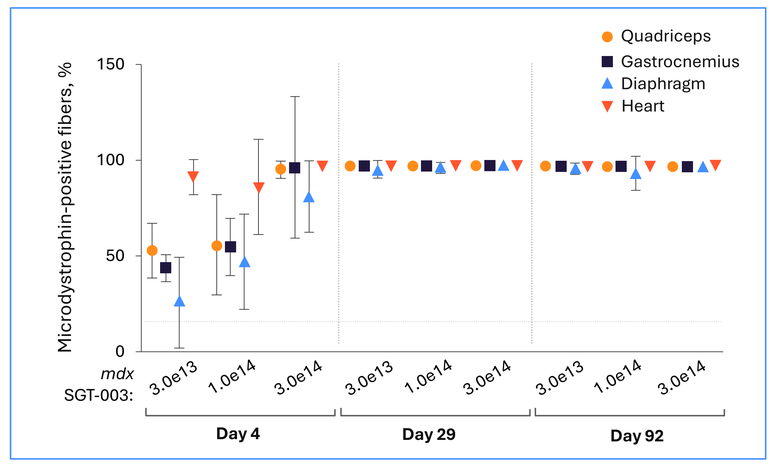
- The copies per microgram of genomic vector gDNA detected in blood are presented. Mean (n=5) and standard deviation for all study animals within a dose group and timepoint are plotted

Figure 2. Whole Blood Concentrations of SGT-003 Declined Rapidly Within Days in Male Cynomolgus Monkeys



- The copies per microgram of genomic vector gDNA detected in blood are presented. Mean (n=3) and standard deviation for study animals within a dose group and timepoint are plotted

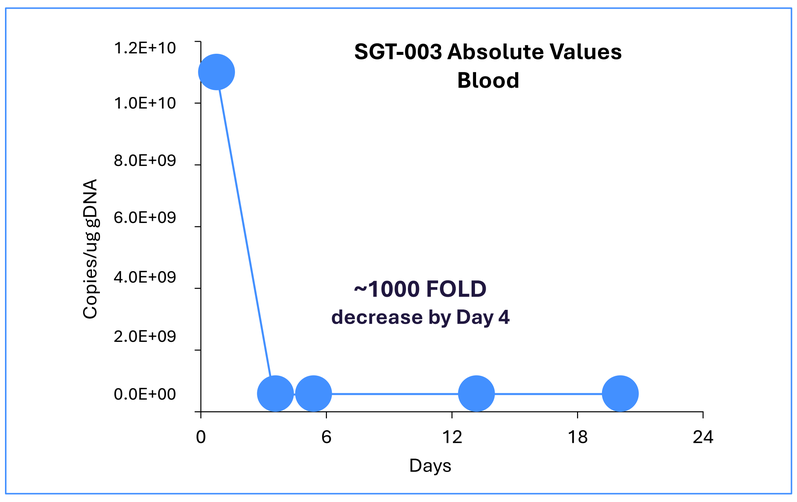
Figure 3. SGT-003 Treatment Exhibited Rapid and Robust Microdystrophin Expression



- SGT-003 dosed *mdx* mice demonstrate rapid tissue expression of SGT-003 microdystrophin at or near 100% positive fibers by Day 4

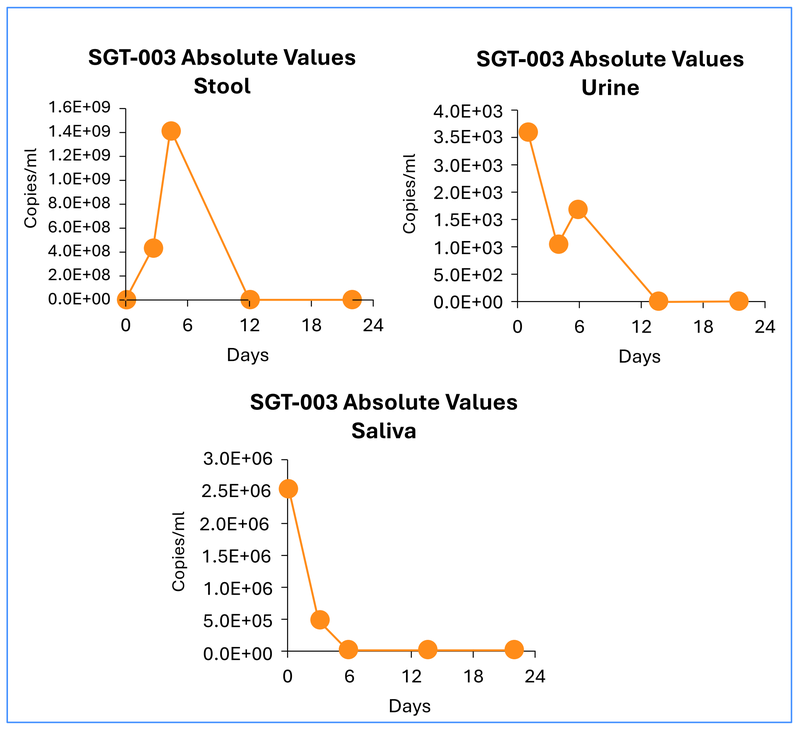
CLINICAL DATA PROVIDE INSIGHT INTO THE KINETICS OF POLARIS-101™ (AAV-SLB101)

Figure 4. Mean Clearance of POLARIS-101™ (POLARIS-101™) up to Day 14[1]



- By Day 4 post-dose, POLARIS-101™ (AAV-SLB101) clearance is rapid and reflects what has been seen in animal models.

Figure 5. Shedding of POLARIS-101™ (AAV-SLB101) from various tissues[1]



- Results from saliva, stool and urine suggest a rapid clearance (**Figure 5. A**, **B**, **C** and **D**)

Table 1. PCR Analysis Demonstrated High-Vector Genome Copies in Muscle Post–SGT-003 Treatment[1]

Dose	Day 90 (N=10)	Day 360 (N=2)
1.0E14 vg/kg	**13**	**12**

- Even with rapid clearance, the high tissue transduction seen suggests that this is secondary due to the rapid uptake into target tissues

COMPREHENSIVE ORTHOGONAL MEASUREMENTS SHOWED CONSISTENT MICRODYSTROPHIN EXPRESSION ACROSS THREE MEASURES

Figure 6. Mean SGT-003 Microdystrophin Expression[1]

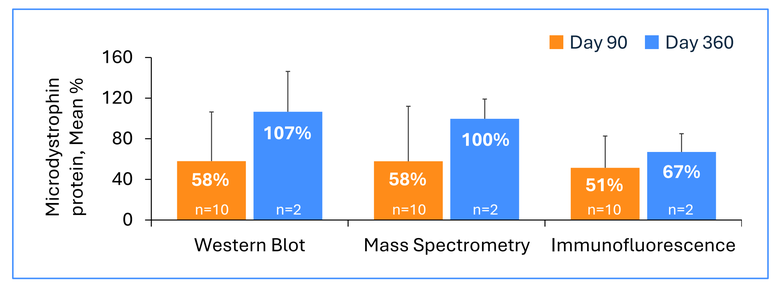


Table 2. SGT-003 Treatment-Related Adverse Events From INSPIRE DUCHENNE Trial[2]

SGT-003 Participants With Treatment-Related Adverse Events (AEs) as of January 13, 2026 (n=33)		n (%)
Serious Adverse Events (SAEs)		1 (3.0)
Most Common Treatment-Related AEs	Nausea	24 (72.2)
	Vomiting	21 (63.6)
	Thrombocytopenia	11 (33.3)
	Decreased appetite	11 (33.3)
	Headache	8 (24.2)
	Cough	8 (24.2)

CONCLUSIONS

- POLARIS-101™ (AAV-SLB101) demonstrated rapid clearance from saliva, urine, blood and stool while showing robust muscle transduction
- Early data from the INSPIRE DUCHENNE study demonstrates a similar pharmacokinetic profile of rapid transduction and robust expression
- Rapid clearance of the vector was seen in boys treated with SGT-003 while achieving high levels of transduction. We hypothesize that this rapid vector transduction may contribute to the encouraging safety and tolerability profile seen as of a January 13, 2026, cutoff date, in the INSPIRE DUCHENNE trial
- The translation of the pharmacokinetic and pharmacodynamic profile from preclinical models to interim human data suggest that the next-generation design of POLARIS-101™ (AAV-SLB101) may be a driving factor behind the robust biologic treatment effect and encouraging safety and tolerability profile observed in the INSPIRE DUCHENNE trial

REFERENCES

1. Data on File, Solid Biosciences. 2025 Data cutoff September 29, 2025. 2. Data on File, Solid Biosciences. 2025. Data cutoff January 13, 2026.

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