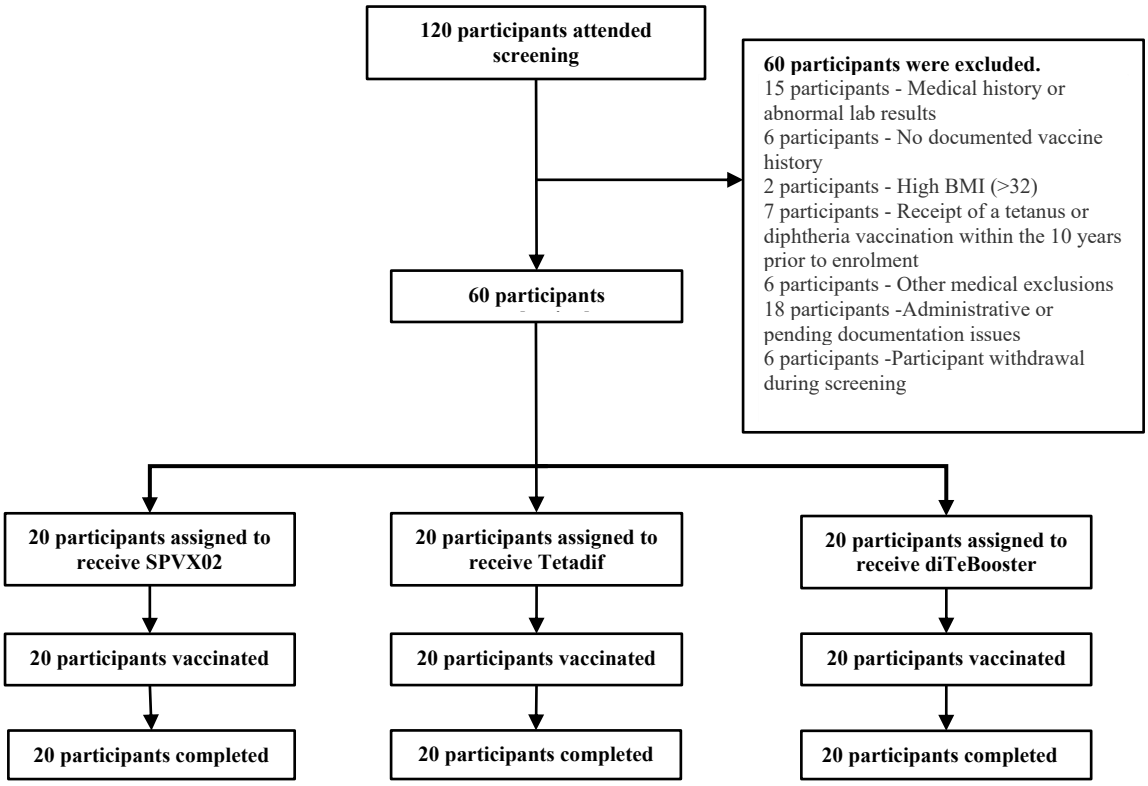
SPL-SPVX02-01 A Phase 1, Randomised, Single-Blind Clinical Study to Evaluate the Safety, Immunogenicity and Tolerability of SPVX02, a Tetanus and Diphtheria Booster Vaccine, Against Two Comparator Vaccines in Healthy Adult Participants

Study Protocol Number: SPL-SPVX02-01

IRAS Number: 1009178

1. PARTICIPANT FLOW



2. BASELINE CHARACTERISTICS

Parameter	Statistic	SPVX02 (N = 20)	Tetadif (N = 20)	diTeBooster (N = 20)
Sex				
Male	n (%)	10 (50.0)	11 (55.0)	9 (45.0)
Female	n (%)	10 (50.0)	9 (45.0)	11 (55.0)
Age at Informed Consent (years)				
	n	20	20	20
	Mean (SD)	37.6 (6.91)	35.6 (9.25)	36.7 (9.67)
	Median	36.5	32.5	36.5
	Q1, Q3	32.5, 42.0	28.5, 41.5	29.0, 42.5
	Min, Max	25, 50	23, 54	21, 54
Ethnicity				
Hispanic or Latino	n (%)	0	1 (5.0)	0
Not Hispanic or Latino	n (%)	19 (95.0)	18 (90.0)	20 (100.0)
Not Reported	n (%)	1 (5.0)	1 (5.0)	0
Unknown	n (%)	0	0	0
Race				
Asian	n (%)	0	0	0
American Indian or Alaska Native	n (%)	0	0	0
Black or African American	n (%)	0	0	0
Native Hawaiian or Other Pacific Islander	n (%)	0	0	0
White	n (%)	19 (95.0)	19 (95.0)	19 (95.0)
Other	n (%)	1 (5.0)	1 (5.0)	1 (5.0)
Unknown	n (%)	0	0	0
Child-Bearing Potential				
Yes	n (%)	9 (90.0)	8 (88.9)	10 (90.9)
No	n (%)	1 (10.0)	1 (11.1)	1 (9.1)
Height at Screening (cm)				
	n	20	20	20
	Mean (SD)	173.62 (9.633)	175.20 (11.202)	172.72 (9.246)
	Median	172.10	178.00	172.95
	Q1, Q3	168.25, 180.40	165.45, 183.35	166.15, 177.80
	Min, Max	158.0, 196.6	155.2, 194.5	157.5, 191.0

Parameter	Statistic	SPVX02 (N = 20)	Tetadif (N = 20)	diTeBooster (N = 20)
Weight at Screening (kg)				
	n	20	20	20
	Mean (SD)	76.53 (12.920)	74.89 (10.312)	74.57 (14.944)
	Median	73.15	72.15	78.10
	Q1, Q3	67.65, 84.90	68.85, 84.85	62.20, 83.50
	Min, Max	57.8, 102.8	56.6, 90.9	45.4, 99.4
BMI at Screening (kg/m^2)				
	n	20	20	20
	Mean (SD)	25.31 (2.983)	24.34 (2.021)	24.83 (3.738)
	Median	24.70	24.50	25.10
	Q1, Q3	23.40, 26.65	22.50, 25.35	21.85, 28.00
	Min, Max	21.3, 32.0	21.8, 29.0	18.3, 31.0

3. OUTCOME MEASURES

There were no severe adverse events associated with this trial.

Table 2 Frequency of treatment-emergent adverse events observed between vaccine groups

	SPVX02 (N=20)		Tetadif (N=20)		diTeBooster (N=20)		Overall (N=60)	
System Organ Class Preferred Term [1]	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Number of Participants with any Adverse Event (AE)	19	95	17	85	18	90	54	90
Number of participants with vaccine-related AE	17	90	16	94	18	100	51	94
Number of participants with unrelated AE	2	10	1	6	0	0	3	5
Related adverse events reported up to 7 days post dose								
Arthralgia								
Mild	1	5	2	10	1	5	4	7
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Chills								
Mild	0	0	1	5	1	5	2	3
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Fatigue								
Mild	3	15	2	10	2	10	7	12
Moderate	0	0	2	10	1	5	3	5
Severe	0	0	0	0	0	0	0	0
Headache								
Mild	1	5	4	20	5	25	10	17
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Injection site bruising								
Mild	0	0	0	0	1	5	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Injection site erythema								

	SPVX02 (N=20)		Tetadif (N=20)		diTeBooster (N=20)		Overall (N=60)	
System Organ Class Preferred Term [1]	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Mild	1	5	3	15	0	0	4	7
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Injection site induration								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Injection site pain								
Mild	10	50	12	60	10	50	32	53
Moderate	4	20	1	5	3	15	8	13
Severe	0	0	0	0	0	0	0	0
Injection site swelling								
Mild	2	10	0	0	1	5	3	5
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Injection site warmth								
Mild	3	15	2	10	3	15	8	13
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Myalgia								
Mild	6	30	6	30	4	20	16	26
Moderate	1	5	1	5	1	5	3	5
Severe	0	0	0	0	0	0	0	0
Pyrexia								
Mild	0	0	1	5	1	5	2	3
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Adverse events reported up to 28 days post dose								
Back pain								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Diarrhoea								
Mild	0	0	1	5	1	5	2	3

	SPVX02 (N=20)		Tetadif (N=20)		diTeBooster (N=20)		Overall (N=60)	
System Organ Class Preferred Term [1]	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Dry eye								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	0	0	1	5	1	2
Severe	0	0	0	0	0	0	0	0
Gastroenteritis								
Mild	0	0	0	0	0	0	0	0
Moderate	1	5	0	0	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Herpes zoster								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Hypothermia								
Mild	0	0	1	5	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Lymph node pain								
Mild	0	0	0	0	1	5	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Musculoskeletal pain								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Nasopharyngitis								
Mild	1	5	0	0	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Oropharyngeal pain								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Otitis externa								

	SPVX02 (N=20)		Tetadif (N=20)		diTeBooster (N=20)		Overall (N=60)	
System Organ Class Preferred Term [1]	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Mild	0	0	1	5	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Pollakiuria								
Mild	0	0	1	5	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Presyncope								
Mild	0	0	1	5	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Pruritus								
Mild	0	0	1	5	1	5	2	3
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Rhinitis								
Mild	0	0	0	0	0	0	0	0
Moderate	1	5	0	0	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Urinary tract infection								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	0	0	1	5	1	2
Severe	0	0	0	0	0	0	0	0
Laboratory adverse events reported up to 28 days post dose								
Alanine aminotransferase increased								
Mild	1	5	0	0	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Blood fibrinogen increased								
Mild	0	0	0	0	0	0	0	0
Moderate	0	0	1	5	0	0	1	2
Severe	0	0	0	0	0	0	0	0
Haemoglobin decreased								
Mild	0	0	1	5	0	0	1	2

	SPVX02 (N=20)		Tetadif (N=20)		diTeBooster (N=20)		Overall (N=60)	
System Organ Class Preferred Term [1]	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Hypophosphatemia								
Mild	1	5	0	0	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Lymphopenia								
Mild	1	5	0	0	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Neutropenia								
Mild	1	5	0	0	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0
Thrombocytopenia								
Mild	0	0	1	5	0	0	1	2
Moderate	0	0	0	0	0	0	0	0
Severe	0	0	0	0	0	0	0	0

[1] MedDRA Version 28.0.
Treatment-Emergent Adverse Event is an AE occurring on or after the first dose of study intervention.
Table shows distinct number of participants with events (n) for each system organ class/preferred term.
If a participant experienced a specific event more than once then the event with the worst severity is summarised.
Percentages are based on the safety analysis data set. Mild, Moderate, and Severe data are only presented when there is a value to report.

Secondary Outcomes

Table 3 - **Seroprotection rates between vaccine groups – Tetanus**

		SPVX02 (N = 20)	**Tetadif (N = 20)**	**diTeBooster (N = 20)**
Seroprotection Rate (Anti-Tetanus toxoid [anti-TT] IgG Titres ≥ 0·1 IU/mL)	n (%)	20 (100)	20 (100)	20 (100)
	95% CI	84, 100	84, 100	84, 100
Number of Participants with Baseline Anti-TT IgG Titres < 1·0/mL	n (%)	13 (65)	13 (65)	9 (45)
Longer Term Seroprotection Rate (≥ 1·0 IU/mL) in Participants with Baseline Anti-TT IgG Titres < 1·0 IU/mL	n (%)	13 (100)	13 (100)	9 (100)
	95% CI	75, 100	75, 100	66, 100
Longer Term Seroprotection Rate (Anti-TT IgG Titres ≥ 1·0 IU/mL)	n (%)	20 (100)	20 (100)	20 (100)
	95% CI	83, 100	83, 100	83, 100
Geometric Mean Titres (IU/mL) at day 28 (Anti-TT IgG)	GMT (GSD)	12·03 (2·20)	5·37 (1·58)	13·94 (1·99)
Geometric Mean Ratio (Anti-Tetanus TT IgG fold difference compared to baseline)	GMR (GSD)	16·6 (3·42)	8·5 (4·06)	15·5 (2·84)
	95% CI	9, 29	4, 16	10, 25

All seroprotection rates and geometric mean ratios are based on immunological assessment at Day 28 postimmunisation. Baseline values refer to pre-immunisation measurements.
Anti-TT= Anti-Tetanus toxoid
95% CI = 95% Clopper-Pearson Confidence Interval.
IgG= Immunoglobulin G.
GMT=Geometric mean titres.
GMR= Geometric mean ratio.
GSD= Geometric standard deviation.
Seroprotection is defined as IgG serum antibody titres of ≥ 0·1 IU/mL.
Longer-term seroprotection is defined as IgG serum antibody titres of ≥ 1·0 IU/mL.

Table 4 – Seroprotection rates between vaccination groups – Diphtheria

		SPVX02 (N = 20)	**Tetadif (N = 20)**	**diTeBooster (N = 20)**
Seroprotection Rate (Anti-Diphtheria toxoid [anti-DT] IgG titres ≥ 0·1 IU/mL)	n (%)	20 (100)	20 (100)	19 (95)
	95% CI	83, 100	83, 100	75, 100
Number of Participants with Baseline Anti-DT IgG Titres < 1·0/mL	n (%)	17 (85)	18 (90)	19 (95)
Longer Term Seroprotection Rate (≥ 1·0 IU/mL) in Participants with Baseline Anti- DT IgG Titres < 1·0 IU/mL	n (%)	13 (76)	15 (83)	18 (95)
	95% CI	50, 93	59, 96	74,100
Longer Term Seroprotection Rate (Anti-DT IgG Titres ≥ 1·0 IU/mL)	n (%)	16 (80)	17 (85)	19 (95·0)
	95% CI	56, 94	62, 97	75, 100
Geometric Mean Titres (IU/mL) at day 28 (Anti-DT IgG)	GMT (GSD)	1·87 (2·44)	1·54 (2·18)	5·08 (3·81)
Geometric Mean Ratio (Anti-DT IgG fold difference compared to baseline)	GMR (GSD)	10·1 (3·36)	9·3 (3·24)	22·8 (2·63)
	95% CI	6, 18	5, 16	15, 36

All seroprotection rates and geometric mean ratios are based on immunological assessment at Day 28 postimmunisation. Baseline values refer to pre-immunisation measurements.
Anti-DT= Anti-Diphtheria toxoid
95% CI = 95% Clopper-Pearson Confidence Interval.
IgG=immunoglobulin G.
GMT= Geometric mean titres.
GMR= Geometric mean ratio.
GSD= Geometric standard deviation.
Seroprotection is defined as IgG serum antibody titres of ≥ 0·1 IU/mL.
Longer-term seroprotection is defined as IgG serum antibody titres of ≥ 1·0 IU/mL.