

CLINICAL STUDY REPORT

Report Status	Final
Report Date	25 August 2025
Study Number	ECRLNJ2025-0577
Protocol Number	CL 1.0 2022
Study Title	Repeated Insult Patch Test
Test Material	Hirudin Topical Serum (2%)

Investigating Laboratory	Eurofins CRL, Inc. 371 Hoes Lane, Suite 100 Piscataway, New Jersey 08854 Telephone: (732) 981-1616 Fax: (732) 981-0520
Principal Investigator	Winston Moy, MD Diplomate, American Board of Dermatology
Study Initiation Date	13 June 2025
Study Completion Date	08 August 2025

PRINCIPAL INVESTIGATOR SIGNATURE

Study Title: Repeated Insult Patch Test

Clinical Study Number: ECRLNJ2025-0577

I have read the study report and confirm that to the best of my knowledge it accurately describes the conduct and results of the study.

Winston Moy
MD

Digitally signed by: Winston Moy MD
DN: CN = Winston Moy MD email =
winston.moy@cpt.eurofinsus.com C =
US
Date: 2025.08.27 11:40:18 -04'00'

Principal Investigator Signature/Date

QUALITY ASSURANCE AUDIT STATEMENT

Eurofins | CRL, Inc. (ECRL) follows established, standardized procedures for clinical testing designed to ensure the well-being of clinical study subjects and the generation of reliable study data. The study was conducted in accordance with the study protocol and ECRL Standard Operating Procedures (SOPs). In addition, the study was conducted following applicable ICH GCP standards to ensure reliability of data, subject safety and confidentiality. All data included in the report is accurately represented. The clinical study master file was reviewed by the Principal Investigator and the Quality Assurance representative.

Natalie
McCrea

Digitally signed by: Natalie
McCrea
DN: CN = Natalie McCrea email =
natalie.mccrea@cpt.eurofinsus.co
m C = US
Date: 2025.08.25 13:01:41 -04'00'

Signature of QA Auditor and Date

1.0 ETHICS

1.1. ETHICAL CONDUCT OF THE STUDY

ECRL followed established, standardized procedures for clinical testing designed to ensure the well-being of clinical study subjects and the generation of reliable study data. It was the responsibility of the Study Sponsor to ensure the study complied with applicable Drug, Cosmetic or Medical Device regulations, which vary by product. The Study Sponsor was solely responsible for product marketing claims based on its interpretation of ECRL studies.

1.2. PARTICIPANT INFORMATION AND INFORMED CONSENT

Each subject was given a copy of the Informed Consent Form (ICF) and had the nature and the purpose of the study explained to them by ECRL personnel. Prior to entry into the study, the subject gave voluntary written consent to participate by signing the ICF. The Principal Investigator retained the original signed Informed Consent Form in the subject's file and gave a copy of the Informed Consent Form to the subject.

1.3. SUBJECT CONFIDENTIALITY

The Principal Investigator ensured that the research subject's confidentiality was maintained. Subjects were identified by their study ID number only. Documents were kept in strict confidence by the Principal Investigator. Any use of personally identifiable data or private health information was justified by the Principal Investigator.

2.0 OBJECTIVE

The objective of this study was to determine the potential of a test material to elicit dermal irritation and/or induce sensitization following repeated patch applications.

3.0 **TEST MATERIAL AND RECORD RETENTION**

The test material received from the Sponsor was identified by Eurofins | CRL, Inc. (ECRL) study and panel numbers. The test material was identified as follows:

Test Material	Test Condition	Patch Type
Hirudin Topical Serum (2%)	TAR / Room Temperature	Semi-Occlusive

TAR = Tested as Received

The Sponsor assumed responsibility for the purity, stability, characterization, and adequate preservation of the test material. The Sponsor provided assurance that the test material submitted has been determined to be safe for use in humans.

3.1. **STORAGE AND RETENTION**

Test material and study documentation will be retained as listed in the sponsor specific sample submission form.

4.0 **SUBJECT SELECTION**

A total of 240 male and female subjects, ranging in age from 18 to 70 years who met all of the inclusion criteria and none of the exclusion criteria as outlined in the study protocol, were selected for study participation.

5.0 STUDY EVALUATIONS

The following Dermal Scoring System was used:

Dermal Score	Description
0	No visible skin reaction
±	Barely perceptible erythema
1+	Mild erythema
2+	Well defined erythema
3+	Severe erythema and edema
4+	Erythema and edema with vesiculation

Letter Codes			
e = Edema	S = Spreading of reaction beyond patch site	D = Oozing, crusting, and/or superficial erosions	F = Follicular irritation with or without pustule formation (folliculitis)
P = Peeling	V = Vesiculation	d = Dryness/scaling	SD= Site Discontinued
Pa = Papules	B = Burning	Ho = Hypopigmentation	ST = Site Terminated
I = Itching	Sc = Scabbing	Hr = Hyperpigmentation	NP = No patching
X = Subject Absent	Ex = Excoriation	C = Changed Site	-- = No reading

6.0 TEST METHOD

This study was conducted according to clinical study protocol CL 1.0 2022.

7.0 STUDY RESULTS

7.1. COMPLETED AND DISCONTINUED SUBJECTS

A total of 221 subjects completed the study. Discontinued subjects are listed below:

Subject Number	Reason for Discontinuation
07A	Lost to Follow Up
08A	Lost to Follow Up
21A	Lost to Follow Up
36A	Lost to Follow Up
58A	Lost to Follow Up
73A	Lost to Follow Up
104A	Lost to Follow Up
111A	Lost to Follow Up
117A	Personal Reasons
21B	Lost to Follow Up
38B	Lost to Follow Up
44B	Lost to Follow Up
47B	Lost to Follow Up
50B	Lost to Follow Up
54B	Lost to Follow Up
66B	Lost to Follow Up
90B	Lost to Follow Up
101B	Lost to Follow Up
117B	Lost to Follow Up

7.2. DERMAL EVALUATIONS

Individual dermal scores recorded during the Induction and Challenge Phases appear in Table I for subjects that elicited dermal reactions, missed a visit, and/or were discontinued.

All other subjects did not exhibit any dermal reactions throughout the course of the entire study and had scores of '0'.

7.3. PROTOCOL DEVIATIONS

No protocol deviations occurred over the duration of the study.

7.0 STUDY RESULTS (CONTINUED)

7.4. PROTOCOL AMENDMENTS

There were no protocol amendments during this study.

7.5. ADVERSE EVENTS

No adverse events were reported over the duration of the study.

8.0 CONCLUSION

Based on the test population of 221 subjects with 109 subjects with self-perceived sensitive skin and under the conditions of this study, the test material identified as Hirudin Topical Serum (2%) did not demonstrate a potential for eliciting dermal irritation or inducing sensitization.

Table I - Summary of Dermal Scores

Subject Number	Induction Scores									Challenge Scores				
	1	2	3	4	5	6	7	8	9	24 Hr.	48 Hr.	72 Hr.	96 Hr.	
7A	0	0	0	0	0	0	0	DISCONTINUED						
8A	0	0	0	0	0	0	0	DISCONTINUED						
21A	0	DISCONTINUED												
36A	0	DISCONTINUED												
53A	0	0	0	0	0	0	0	0	0	0	0	X	0	----
58A	0	0	0	0	DISCONTINUED									
60A	0	0	0	0	0	0	0	0	0	0	0	0	0	----
73A	0	DISCONTINUED												
103A	0	0	0	0	0	0	0	0	0	0	0	0	0	X
104A	0	0	0	0	0	0	0	0	0	0	0	0	X	DISC
111A	0	0	0	0	0	0	0	0	0	0	0	0	X	DISC
113A	0	0	0	0	0	0	0	0	0	0	0	X	0	0
117A	0	0	0	DISCONTINUED										

Subject Number	Induction Scores									Challenge Scores			
	1	2	3	4	5	6	7	8	9	24 Hr.	48 Hr.	72 Hr.	96 Hr.
4B	0	0	0	0	0	0	0	0	0	0	0	X	0
16B	0	0	0	0	0	0	0	0	0	0	0	X	0
21B	0	0	0	0	0	0	0	0	0	0	DISCONTINUED		
36B	0	0	0	0	0	0	0	0	0	0	0	0	X
38B	0	0	0	0	0	0	DISCONTINUED						
44B	0	0	0	0	0	0	DISCONTINUED						
47B	0	0	0	0	0	0	0	0	0	0	DISCONTINUED		
50B	0	0	0	0	0	0	0	DISCONTINUED					
52B	0	0	0	0	0	0	0	0	X	0	0	0	---
54B	0	0	0	0	0	0	DISCONTINUED						
63B	0	0	0	0	0	0	0	0	X	0	0	0	---
66B	0	0	0	0	0	0	0	0	0	0	0	X	DISC
74B	0	0	0	0	0	0	0	0	0	0	X	0	0
90B	DISCONTINUED												
101B	0	0	0	DISCONTINUED									
102B	0	0	0	0	0	0	0	0	0	0	0	0	X
109B	0	0	0	0	0	0	0	0	0	X	0	0	0
113B	0	0	0	0	0	0	0	0	0	0	0	0	---
114B	0	0	0	0	0	0	0	0	0	0	0	0	---
117B	0	0	0	DISCONTINUED									

DISC = Discontinued

All other 207 subjects except the above listed did not exhibit any dermal reactions throughout the course of the entire study and had scores of '0'.

Appendix I - Subject Demographics

Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type	Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type
01A	57	F	AA	V	S	31A	24	F	Ca,AA	I	S
02A	68	F	HL	IV	S	32A	50	F	AA	IV	S
03A	66	F	HL	IV	S	33A	55	F	AA	V	S
04A	62	F	Ca	II	S	34A	26	M	AA	VI	S
05A	32	F	Ca	II	S	35A	61	F	AA	VI	S
06A	30	F	Ca	II	S	36A	24	F	O	I	S
07A	30	M	HL	I	S	37A	53	F	In	IV	S
08A	67	F	Ca	II	S	38A	26	F	Ca	II	S
09A	30	F	As	III	S	39A	31	F	Ca	III	S
10A	64	F	As,O	IV	S	40A	31	M	HL	III	S
11A	54	F	Ca,HL	III	S	41A	46	F	AA	IV	S
12A	34	F	AA	V	S	42A	47	F	HL	III	S
13A	54	F	AA	VI	S	43A	62	F	AA	VI	S
14A	41	F	AA	V	S	44A	65	F	Ca	II	S
15A	34	F	HL	III	S	45A	51	F	Ca	III	S
16A	41	M	HL	III	S	46A	56	F	AA	IV	S
17A	36	F	HL	III	S	47A	66	F	AA	V	S
18A	30	M	AA	VI	S	48A	57	M	Ca	II	S
19A	57	M	Ca	II	S	49A	53	F	In	IV	S
20A	57	F	HL	III	S	50A	40	M	HL	III	S
21A	19	M	HL	III	S	51A	30	F	AA	IV	S
22A	43	M	AA,O	VI	S	52A	28	M	HL	III	S
23A	62	F	Ca	I	S	53A	36	M	HL	III	S
24A	45	M	In	IV	S	54A	59	M	AA	V	S
25A	23	M	AA	VI	S	55A	52	F	In	IV	S
26A	61	M	AA	V	S	56A	59	F	Ca	III	S
27A	55	F	Ca	I	S	57A	44	M	As	III	S
28A	61	M	Ca	I	S	58A	31	F	Ca	I	S
29A	53	F	AA	V	S	59A	63	F	AA	III	S
30A	23	F	AA	V	S	60A	34	F	AA	V	S

S = Sensitive Skin Type

Fitzpatrick Skin Type	Reaction to the Sun	Ethnicity	
I	Always burns, never tans	AA = African American	As = Asian
II	Usually burns, tans with difficulty	Ca = Caucasian	HL = Hispanic/Latino
III	Sometimes burns, but tans easily	In = Indian	O = Other
IV	Rarely burns, tans very easily		
V	Rarely burns, tans profusely		
VI	Never burns, deeply pigmented		

Appendix I – Subject Demographics (Continued)

Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type
61A	36	F	Ca	I	N
62A	70	F	AA,Ca	IV	N
63A	66	M	AA	V	N
64A	56	F	Ca	I	N
65A	31	F	In	III	N
66A	26	F	HL	III	N
67A	42	F	AA	VI	N
68A	31	M	AA	V	N
69A	70	F	Ca	I	N
70A	56	F	AA	VI	N
71A	48	F	HL	IV	N
72A	59	M	HL	IV	N
73A	25	F	AA	V	N
74A	27	M	AA	VI	N
75A	53	M	AA	VI	N
76A	43	M	HL	III	N
77A	47	F	AA	V	N
78A	48	F	Ca	II	N
79A	51	F	AA	V	N
80A	40	F	AA	VI	N
81A	54	F	HL	III	N
82A	44	F	Ca	III	N
83A	41	M	HL	IV	N
84A	51	F	Ca	II	N
85A	39	F	Ca	II	N
86A	68	F	Ca	II	N
87A	67	F	AA	IV	N
88A	25	F	AA,HL	IV	N
89A	43	F	AA	V	N
90A	68	F	Ca	III	N

Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type
91A	68	F	Ca	II	N
92A	37	F	Ca,HL	IV	N
93A	47	F	HL	III	N
94A	69	F	Ca	II	N
95A	63	F	Ca	I	N
96A	52	F	AA	V	N
97A	41	F	HL	III	N
98A	60	M	Ca	I	N
99A	68	M	AA	II	N
100A	66	M	Ca	II	N
101A	67	F	AA	III	N
102A	19	F	AA	III	N
103A	28	F	AA	V	N
104A	35	F	HL	III	N
105A	36	F	Ca	II	N
106A	50	M	HL,Ca	II	N
107A	58	F	AA	V	N
108A	49	M	HL,Ca	III	N
109A	46	F	HL	III	N
110A	37	F	HL	IV	N
111A	44	M	HL	III	N
112A	44	F	HL	III	N
113A	43	F	HL	III	N
114A	48	F	Ca	II	N
115A	38	M	HL	III	N
116A	32	F	AA	V	N
117A	59	M	Ca	II	N
118A	55	F	Ca	II	N
119A	47	F	AA	V	N
120A	65	M	AA	VI	N

N = Normal Skin Type

Fitzpatrick Skin Type	Reaction to the Sun	Ethnicity	
I	Always burns, never tans	AA = African American	Ca = Caucasian
II	Usually burns, tans with difficulty	HL = Hispanic/Latino	In = Indian
III	Sometimes burns, but tans easily		
IV	Rarely burns, tans very easily		
V	Rarely burns, tans profusely		
VI	Never burns, deeply pigmented		

Appendix I – Subject Demographics (Continued)

Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type
01B	52	F	HL	IV	S
02B	54	F	In	IV	S
03B	37	F	Ca	II	S
04B	64	M	AA	VI	S
05B	43	M	AA	V	S
06B	19	F	Ca	II	S
07B	38	F	Ca	III	S
08B	23	M	Ca	III	S
09B	18	F	AA	V	S
10B	54	M	AA	V	S
11B	47	F	AA	VI	S
12B	68	F	HL	III	S
13B	67	M	AA	V	S
14B	54	M	AA	V	S
15B	68	F	As	IV	S
16B	58	F	HL	V	S
17B	65	F	HL	IV	S
18B	40	F	HL	III	S
19B	57	F	Ca	II	S
20B	59	F	HL	III	S
21B	40	M	As	IV	S
22B	24	F	HL	IV	S
23B	67	F	HL	IV	S
24B	67	M	HL	III	S
25B	46	F	HL	III	S
26B	22	F	AA	II	S
27B	42	F	Ca	II	S
28B	39	F	AA	VI	S
29B	60	F	HL	III	S
30B	41	F	AA	III	S

Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type
31B	36	F	HL	III	S
32B	60	F	AA	V	S
33B	69	M	AA	IV	S
34B	70	F	Ca	II	S
35B	52	F	As	IV	S
36B	29	F	Ca	II	S
37B	61	F	As	III	S
38B	19	F	HL	II	S
39B	39	F	HL	III	S
40B	68	F	AA	V	S
41B	64	M	HL	III	S
42B	68	F	AA	IV	S
43B	67	M	AA	VI	S
44B	56	F	AA	V	S
45B	68	F	Ca	III	S
46B	69	F	HL	III	S
47B	39	M	As	III	S
48B	53	F	AA	III	S
49B	58	F	Ca	IV	S
50B	43	F	Ca	III	S
51B	37	M	Ca	III	S
52B	41	F	HL	III	S
53B	42	F	AA	V	S
54B	58	F	AA	IV	S
55B	43	F	HL	III	S
56B	58	F	HL	III	S
57B	19	F	Ca	II	S
58B	33	F	HL	II	S
59B	32	F	Ca	II	S
60B	26	F	Ca	II	S

S = Sensitive Skin

Fitzpatrick Skin Type	Reaction to the Sun	Ethnicity	
II	Usually burns, tans with difficulty	AA = African American	As = Asian
III	Sometimes burns, but tans easily	Ca = Caucasian	HL = Hispanic/Latino
IV	Rarely burns, tans very easily	In = Indian	
V	Rarely burns, tans profusely		
VI	Never burns, deeply pigmented		

Appendix I – Subject Demographics (Continued)

Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type	Subject Number	Age	Sex	Ethnicity	Fitzpatrick Skin Type	Skin Type
61B	68	M	Ca	I	N	91B	54	M	Ca	II	N
62B	56	F	AA	V	N	92B	56	M	AA	V	N
63B	25	M	HL	III	N	93B	50	F	As	IV	N
64B	66	F	Ca	II	N	94B	28	F	HL	III	N
65B	32	F	Ca	III	N	95B	45	M	HL	III	N
66B	22	F	HL	III	N	96B	60	F	Ca	II	N
67B	61	F	AA	V	N	97B	52	F	HL	II	N
68B	24	F	HL	III	N	98B	25	M	HL	III	N
69B	47	M	HL	III	N	99B	35	F	AA	IV	N
70B	55	F	HL	IV	N	100B	33	F	AA	IV	N
71B	67	M	Ca	II	N	101B	20	M	AA	III	N
72B	65	F	As	II	N	102B	48	M	HL	IV	N
73B	30	M	HL	IV	N	103B	43	F	HL	V	N
74B	49	F	As	III	N	104B	45	M	HL	III	N
75B	48	M	As	IV	N	105B	54	M	Ca	II	N
76B	46	M	As	IV	N	106B	23	M	HL	III	N
77B	18	F	As	IV	N	107B	18	F	HL	III	N
78B	43	F	As	IV	N	108B	41	F	HL	III	N
79B	45	F	As	IV	N	109B	44	M	HL	IV	N
80B	47	F	HL	III	N	110B	54	F	As	IV	N
81B	66	F	Ca	III	N	111B	65	F	As	IV	N
82B	53	M	HL	III	N	112B	64	M	As	IV	N
83B	40	M	HL	III	N	113B	59	F	HL	III	N
84B	62	F	Ca	III	N	114B	34	F	HL	III	N
85B	45	M	HL	III	N	115B	62	F	AA	IV	N
86B	37	F	HL	II	N	116B	36	M	HL	III	N
87B	64	F	AA	V	N	117B	43	F	HL	III	N
88B	39	F	HL	III	N	118B	46	F	Ca	II	N
89B	45	F	Ca	IV	N	119B	59	F	Ca	II	N
90B	40	M	AA	VI	N	120B	41	F	AA	V	N

N = Normal Skin

Fitzpatrick Skin Type	Reaction to the Sun	Ethnicity	
I	Always burns, never tans	AA = African American	As = Asian
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V	Rarely burns, tans profusely		
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