

**TEST REPORT**

NUMBER: 181000805SHA-003

DATE: 16 Mar, 2019

APPLICANT: Hunan Biomaser Technology Co.,LTD.

ADDRESS: No.152, Shenyuan Road, Qingshanpu Town, Changsha, Hunan, China.

**SAMPLE DESCRIPTION:**

ONE (1) TYPE OF SUBMITTED SAMPLES SAID TO BE:

TEST NAME: Irritation Test

TEST STANDARD: ISO 10993-10:2010

TEST ARTICLE NAME: PERMANENT MAKEUP NEEDLE

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**TESTS CONDUCTED:**

AS REQUESTED BY THE APPLICANT, THE SUBMITTED SAMPLES WERE  
SUBJECTED TO THE IRRITATION TEST  
FOR DETAILS REFER TO ATTACHED PAGE(S)

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TO BE CONTINUED

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## **Summary**

The test article, Permanent Makeup Needle, Lot: E00280826, was extracted in sodium chloride injection. The extracts were evaluated for irritation based on the requirement of ISO 10993-10: 2010 Biological evaluation of medical device – Part 10: Tests for irritation and skin sensitization.

Apply 0.5 mL appropriate extract to a 2.5 cm×2.5 cm absorbent gauze patches. One patch was applied on each side of the animal. At the same time, a control patch of gauze moistened with the extract vehicle was applied. The application sites were covered with a bandage for a minimum of 4 h. Observations for skin irritation were conducted and scored at 1 h, 24 h, 48 h and 72 h after removal of the patches.

Under the conditions of the test, the test article would be considered a non-irritant.

Authorization for duplication of this report, except in whole, is reserved pending Intertek's written approval.

## **1. Introduction**

### **Purpose**

The test article identified below was extracted and the extracts were evaluated for irritation. This study was conducted based on the requirement of ISO 10993-10: 2010 Biological evaluation of medical device – Part 10: Tests for irritation and skin sensitization.

### **Date**

The test article was received on August 30, 2018. The extractions were conducted on November 12, 2018. The animals were dosed on November 15, 2018, and the observations were conducted on November 16, 17 and 18, 2018.

### **Compliance**

The laboratory meets the requirement of international standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The ANSI-ASQ National Accreditation Board (ANAB) Accreditation Certification No. is AT-1894. The China National Accreditation Service for Conformity Assessment accreditation No. is CNAS L8240.

## **2. Material**

### **2.1 Sample Identification**

The information of test sample was provided by the client, and the test facility is not responsible for its authenticity.

<b>Test Article Name:</b>	Permanent Makeup Needle
<b>Lot:</b>	E00280826
<b>Model:</b>	Not supplied by sponsor
<b>Test Article Identification:</b>	M2018102409
<b>Status:</b>	Packing intact
<b>Stability Testing:</b>	Not supplied by sponsor

<b>Expired Date:</b>	2021/07/08
<b>Strength, Purity and Composition:</b>	Not supplied by sponsor
<b>Physical Description Of The Test Article:</b>	See photo in the attachment
<b>Storage Condition:</b>	Room temperature and avoiding light
<b>Sample Handling:</b>	Disposed by laboratory

## **2.2 Testing Preparation**

<b>Vehicles:</b>	Sodium chloride injection (SC)
<b>Preparation:</b>	Based on a ratio of 0.2/mL, 2.5 g of test article was covered with 12.5 mL of the vehicles. The test article was extracted and agitated in SC at 37 °C for 72 hours. The extraction vehicles without test article were similarly prepared to serve as control blanks. Extracts were used in 24 h after extraction. The extracts were not processed by filtration, centrifugation or other methods.

<b>Condition of extracts</b>	<u>Test</u>	<u>Control</u>
<u>SC:</u>	clear	clear
<b>Positive control:</b>	Sodium dodecyl sulfate was diluted with SC as the positive control. The concentration was 20%.	

## **3. Test System and Justification**

### **3.1 Test System**

The test animals, equipments and reagent used in this study were identified as following:

Table 1 Table of the test animals

<b>Species:</b>	Rabbit
<b>Breed:</b>	New Zealand White
<b>Source:</b>	Beijing Jinmuyang Experimental Animal Breeding Co., Ltd
<b>Sex:</b>	Male
<b>Body weight range:</b>	2.1 kg to 2.3 kg at injection
<b>Age:</b>	Young adult
<b>Acclimation period:</b>	Minimum 5 days
<b>Number of animals:</b>	Three
<b>Identification method:</b>	Ear tag

Table 2 Table of Equipments

Equipment	Model Number	Identification Number	Calibration validity
Balance	TCS-300	SW-YS-094	2019/05/15
Pressure steam sterilizer	LDZH-150KBS	SW-YS-383	2019/05/15
Constant Temperature Oscillator	THZ-92C	SW-YS-091	2019/04/15
Cleaning bench	SJ-CJ-2FD	SW-YS-200	/
Electronic balance	CP1502	SW-YS-056	2019/04/10

Table 3 Table of Reagents

Reagent	Lot	Model	Manufacturer	Storage condition
Sodium chloride injection	318070602	100 mL:0.9 g	Shandong Pharmaceutical Ltd.	WEGO Co., RT

### **3.2 Justification of Test System**

The irritation test in rabbits is specified in the current ISO 10993-10 testing standards and has been

used historically to evaluate biomaterial extracts.

The positive challenge is conducted every six months to ensure the sensitivity and reliability of experimental technique. The positive control selected by Intertek show moderate irritation. The experimental results is summarized in Appendix 1.

### **3.3. Animal Management**

<b>Husbandry:</b>	Conditions conformed to Standard Operating Procedures that are based on ‘Guide for the Care and Use of Laboratory Animals’.
<b>Food:</b>	A commercially available feed from Beijing Keao Xieli Feed Co. Ltd. was provided daily.
<b>Water:</b>	Potable water which met GB 5749 standards for drinking water quality was provided <i>ad libitum</i> through species appropriate water container.
<b>Contaminants:</b>	Reasonably expected contaminants in feed or water supplies did not have the potential to influence the outcome of this test.
<b>Housing:</b>	Animals were housed in group in stainless steel suspended cages identified by a card indicating the lab number, animal number, test code, sex, animal code and first treatment date.
<b>Environment:</b>	<p>The room temperature was monitored daily. the temperature range for the room was within a range of 20-23 °C.</p> <p>The room humidity was monitored daily. The humidity range for the room was 45-65 %.</p> <p>The light cycle was controlled using an automatic timer (12 hours light, 12 hours dark).</p>
<b>Personnel:</b>	Associate involved were appropriately qualified and trained.
<b>Selection:</b>	Only healthy, previously unused animals were selected.

## **4. Method**

### **4.1 Preparation of animals**

Fur was clipped within 24 h to 4 h of testing on the backs of the animals, a sufficient distance on both sides of the spine for application and observation of all test sites (approximately 10 cm×15 cm).

### **4.2 Application of extracts and extract vehicle**

Apply 0.5 mL appropriate extract to a 2.5 cm×2.5 cm absorbent gauze patches. One patch was applied on each side of the animal as shown in Figure 1. At the same time, a control patch of gauze moistened with the extract vehicle was applied as shown in Figure 1. The application sites were covered with a bandage for a minimum of 4 h. At the end of the contact time, the dressings were removed and the positions of the sites were marked with permanent ink. Removed the residual test material by washing with warm water.

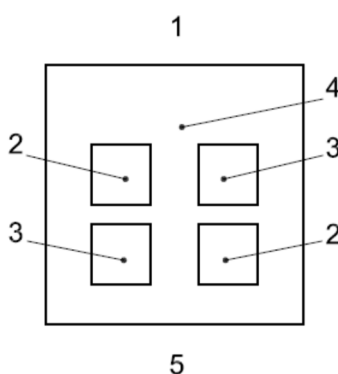


Figure 1 Location of skin application sites

1- cranial end; 2- test site; 3- control site; 4- clipped dorsal region; 5- caudal end.

### **4.3 Observation of animals**

The skin reactions for erythema and oedema were described and scored according to the scoring system given in Table 4, for each application site at each time interval. The appearance of each application site was recorded at 1 h, 24 h, 48 h and 72 h after removal of the patches.

Table 4 Scoring system for skin reaction

Erythema (ER)		Oedema (OE)	
0	No erythema	0	No oedema
1	Very slight erythema (barely perceptible)	1	Very slight oedema (barely perceptible)
2	Well-defined erythema	2	Well-defined oedema (edges of area well-defined by definite raising)
3	Moderate erythema	3	Moderate oedema (raised approximately 1 mm)
4	Severe erythema (beet redness) to eschar formation preventing grading of erythema	4	Severe oedema (raised more than 1 mm, and extending beyond exposure area)
Maximal possible score for irritation is 8			
Other adverse changes at the injection sites shall be recorded and report.			

## 5. Evaluation and Statistics

The primary irritation index (PII) was determined as follows.

Only 24 h, 48 h and 72 h observations were used for calculations. After the 72 h grading, all erythema grades plus oedema grades 24 h, 48 h and 72 h were totaled separately for each test sample and blank for each animal. The primary irritation score for an animal was calculated by dividing the sum of all the scores by 6 (2 test sites, 3 observation time).

To obtain the primary irritation index for the test sample, all the primary irritation scores of the individual animals were added and divided by the number of animals.

When blank or negative control was used, the primary irritation score was obtained by subtracting the primary irritation score of the controls.

The cumulative irritation index was compared with the categories of irritation response given in Table 5.

Table 5 Primary or cumulative irritation index categories in a rabbit

Mean score	Response category
0 to 0.4	Negligible
0.5 to 1.9	Slight

2 to 4.9	Moderate
5 to 8	Severe

## **6. Results**

**Clinical Observations:** None of the animals on study showed abnormal clinical signs during the 72 hours test period.

**Dermal Observations:** There were no significant dermal reactions observed at the test sites on the rabbits at the 60 minute, 24, 48 and 72 hours observation periods.

The results are presented in Table 6. There were no reactions observed at the test sites and the control sites.

Table 6 Calculation of the primary irritation index and final result

Time interval	SC					
	Test			Control		
	1	2	3	1	2	3
24 h	0	0	0	0	0	0
48 h	0	0	0	0	0	0
72 h	0	0	0	0	0	0
A1	0	0	0	0	0	0
A2	0			0		
PII	0					
Response category	Negligible					

Note: A1 is the primary irritation score for an animal that calculated by dividing the sum of all the scores by 6.

A2 is obtained by adding all the primary irritation scores of the individual animals and divided by the number of animals.

## **7. Conclusion**

Under the conditions of this study, the test extracts showed no irritation on the skin. The test extracts would be considered a non-irritant.

Results and conclusions apply only to the test article tested. No further evaluation of these results is made by Intertek. Any extrapolation of these data to other samples is responsibility of the sponsor.

## **8. Quality Assurance**

Inspections were conducted at interval adequate to assure the integrity of the study in conformance with Intertek's procedure.

## **9. Proposed Dates**

The study dates were finalized by the study director following receipt of the sponsor approved protocol and appropriate material for the study. Initiation of the study was date on which the study director signed the protocol. Projected dates for starting the study (extraction) and for the completion of the study (final report release) were provided to the sponsor (or representative of the sponsor).

## **10. Records**

All raw data pertaining to this study and a copy of the final report were retained in designated Intertek archive files.

## **11. References**

- ISO 10993-10: 2010 Biological evaluation of medical device – Part 10: Tests for irritation and skin sensitization.
- ISO 10993-12: 2012 Biological evaluation of medical devices – Part 12: Sample preparation and reference materials.

## **12. Protocol Changes**

Any necessary changes to the protocol after sponsor approval or study initiation were documented and approved by the study director as protocol amendments. Copies were distributed to the sponsor, the raw data file and the Intertek quality assurance department.

## **Appendix 1 Positive Challenge Result**

Table7 Calculation of the primary irritation index and final result of positive control

Time interval	SC					
	Test			Control		
	1	2	3	1	2	3
24 h	12	12	12	0	0	0
48 h	12	12	12	0	0	0
72 h	12	12	12	0	0	0
A1	6	6	6	0	0	0
A2	6			0		
PII	6					
Response category	Severe					

Note: A1 is the primary irritation score for an animal that calculated by dividing the sum of all the scores by 6.

A2 is obtained by adding all the primary irritation scores of the individual animals and divided by the number of animals.

The data of positive control comes from Intertek (ID: SQR-MD-DW-4.13-050-A/1-M201802).

## Appendix 2 Photo of Test Article



\*\*\*\*\*End of Report\*\*\*\*\*