# Transducer Protector

# Acute Systemic Injection Study

# FINAL REPORT

**Client:** Finetech Research and Innovation Corporation

**Testing Institution:** SGS Taiwan Ltd.

**Report No. :** UB/2013/70737A-09

**Report Date:** 2013/09/13

**Note:**

1. The content of this report is invalid if it is not presented as the entire report.
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3. The results shown in this test report refer only to the test article(s) tested.
4. The report is the Chinese version of translations UB/2013/70737A-08

## Acute Systemic Injection Study:

## Transducer Protector

| | |
|---|---|
| Report No.: | UB/2013/70737A-09 |
| Test article registration date： | 2013/07/16 |
| Experimental starting date： | 2013/09/09 |
| Experimental completion date： | 2013/09/12 |
| Animal in-grouping: | 2013/09/05 |
| Test article administration: | 2013/09/09 |
| Observation of reaction: | 2013/09/09~2013/09/12 |

**Testing Institution**

**Name:** SGS TAIWAN LTD.

**Address:** No. 38, Wu Chyuan 7th Rd., New Taipei Industrial Park, Wu Ku Dist., New Taipei City 24890, Taiwan (R. O. C.)

**Subcontract Lab**

**Name:** LEON Biotechnology Company Limited Biocompatibility Testing Laboratory

**Address:** 4F.-2, No. 288-8, Xinya Rd., Qianzhen Dist., Kaohsiung City 806, Taiwan (R.O.C.)

**Client / Sponsor**

**Name:** Finetech Research and Innovation Corporation

**Address:** No.29, Anle St., Xiushui Township, Changhua County 504, Taiwan (R.O.C.)

# TEST ARTICLE INFORMATION

## INFORMATION FOR ☒ TEST ARTICLE/ ☐ CONTROL ARTICLE

| | |
|---|---|
| Sponsor Company Name | Finetech research and innovation corporation |
| Sponsor Address | No.29, Anle St., Xiushui Township, Changhua County 504, Taiwan (R.O.C.) |
| Contract study item | ☒ Base on the contract ☐ Others _____ |
| Name of Test article/ Control article | Transducer Protector |
| Batch/Lot number | ☐ Base on the specific number on the package : _____<br>☐ Base on the date on the package : _____<br>☐ Base on the arrived date<br>☑ Others : N/A |
| Specification & Amount | 10pcs/pack * 7packs (e.g.10ml / bottle * 6 bottles) |
| Retention amount (Note 2) | The amount of the same lot is sufficient for ☐ One test ☐ Two test (for retention) |
| External features | External features: ☐ liquid ☐ powder ☐ tablet ☐ capsule ☒ Other column — Color : translucent white |
| Major components & Purity | Major components: Polypropylene meterial housing with membrane — Purity: _____ |
| Solvent and solubility | N/A |
| Storage condition | ☒ Room temperature ☐ 4℃ ☐ Dry ☐ Light sensitive ☐ Others _____ |
| Expiration date(Note 3) | ☐ Date: ___ / ___ / ___ (YYYY/MM/DD) or<br>☒ Period : 2 year 0 month 0 day |
| Attachment(Note 4) | ☐ Certificate of Analysis ☐ Material Safety Data Sheet ☐ Stability Test Result<br>☐ Other : _____ ☒ No attachment (Note4) |
| Sterilization | Has been sterilized ☐ YES ☒ NO (If Yes, please select the following item)<br>Methods ☐ EOsterilization ☐ Gamma sterilization ☐ Steam sterilization ☐ Other _____ |
| Categorization of devices (The column is only for device used ) | 1. ☒ Contact with intact skin or mucosa (cumulative contact duration)<br>☒ Short-term (no greater than 4 hr)<br>☐ Long-term (exceeding 4 hr) Maximum duration is _____ hrs<br>2. ☐ Implanted device |
| Specific requirement (Note 5) | N/A |

**Sponsor Signature/ Date :** Golden Li 2013. July 12th.

Note 1. Above all information is disclosure by the sponsor.
Note 2. If the sponsor doesn't provide the retention of test article/control article, the retention of a reserved test article/control article from each batch of test article /control article is the responsibility of the Sponsor.
Note 3. If the effective period is less than 5 years, the test article/control article will be retained till the expiry date. If the effective period is longer than 5 years, the test article/control article will be retained for 5 years only.
Note 4. Determination and documentation of identity, strength, purity, stability, composition, method of synthesis, fabrication, derivation or other characteristics of the test article/control article are the responsibility of the Sponsor.
Note 5. The test article/control article which has been destroyed or cutting will be discarded after the end of experiment. For retention or return of the kind of test article/control article, please indicate in the "special requirement". The human intake suggests or dose requested by the sponsor also can fill in the "special requirement". Note treatment method after test if the test article need to be retreated
Note 6. The code number of test article is the same as the report number.
Note 7. Note 'N/A' if not applicable. Do not leave blank.

版次：3.1 試驗-對照物質資料表 Information for test article-control article
發行日期：2013.06.14

## TABLE OF CONTENTS

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## Statement of GLP Compliance

All study activities performed by SGS Taiwan are carried out in compliance with the GLP (Good Laboratory Practices) for Nonclinical Laboratory Studies (Department of Health, Taiwan, 2006) and current OECD Principles of Good Laboratory Practice (Organization for Economic Cooperation and Development, Paris, ENV/MC/CHEM (98) 17). The study was conducted in accordance with the protocol and standard operating procedures and monitored in conformity with the protocol. All laboratory data are accurately recorded and verified. SGS Taiwan makes no GLP compliance claim for characterization and verification of the test article identity and properties; this is the responsibility of the sponsor.

Study Director:

Howard Kao — 2013.9.16

Howard Kao / SGS Taiwan Ltd. — Date Completed

Deputy of
Facility Manager:

Amy L. — 2013.09.16

Amy Liu / SGS Taiwan Ltd. — Date Completed

SGS

## Quality Assurance Statement

This study was audited by Quality Assurance personnel of Life Science Service. The QA inspection report includes review of study plan, result of a study-based audit and results of audit of raw data and study report. The audit report was issued upon the completion of final report of testing.

QA:

Amy Liu / SGS Taiwan Ltd.

2013.09.16

Date Completed

## Archiving

All the study-related protocol and the final report will be kept in archives room of SGS (TAIWAN) LTD for 3 years. Agent authorized by the sponsor can apply for the review according to SGS procedure.

Address:

No. 38, Wu Chyuan 7th Rd., New Taipei Industrial Park, Wu Ku Dist., New Taipei City 24890, Taiwan (R. O. C.)

## Abstract

The study was to investigate the response of the toxicity of "Transducer Protector" extract in the mouse. Inject the test article extract and saline into each of the mice. The results showed that there were no significant clinical signs and symptoms in either the control or treatment group. Therefore, the "Transducer Protector" extract did not cause toxicity reaction or death after intraperitioneal injection in mice.

## PURPOSE

The study is to evaluate the possibility of toxicity reaction after injecting the test article "Transducer Protector" extract into the peritoneal cavity of mice. The experiment is performed by following BS EN ISO 10993-11.

## EXPERIMENTAL DESIGN

A. Animals

| | |
|---|---|
| 1. Species/Strain | ICR mice |
| 2. Resource | LASCO |
| 3. Body weights (sex) | >20 g (female) |
| 4. Quarantine/acclimation | Animals were subjected to quarantine and acclimation before treatment. Mice were selected by veterinarians based on health status. |

B. Feeding and care

| | |
|---|---|
| 1. Environment | |
| Temperature | 20~26℃ |
| 2. Cage and animal no. | |
| Quarantine/acclimation | 5 mice/cage |
| Study period | 5 mice/cage |
| 3. Feed | |
| Name | Altromin 1326 |
| Brand | Altromin, Germany |
| Way to supply | *ad libitum* |
| 4. Drinking water | |
| Sort | RO Water |
| Way to supply | *ad libitum* |

C. Grouping

| Group | Control | Treatment |
|---|---|---|
| Number of animals | 5 | 5 |
| Treated article | 0.9% saline | Test article extract (solvent- 0.9% saline) |

D. Administration of test article and control

1. Preparation

According to ISO 10993-12 guidelines, the ratio of the test article to the extractant was 0.2 g sample/ml extractant. In this study, the test article was immersed in 0.9% saline (TAI YU PHARMACEUTICAL CO., LTD.) for 72 h at 50°C with constant agitation (100 rpm). The pH adjustment, filtration and centrifugation are not conducted. After extraction, the appearance of the extract was not different than the control group.

2. Method, route and frequency of administration

Inject a single dose of the test article and control solution into the peritoneal cavity of mice.

3. Volume of administration

Test article 50 ml/kg; control solution 50 ml/kg.

E. Procedure

1. Inject test article extract and control solution into each of the mice intraperitonealy.
2. Observe all mice immediately after injection, and do it again 4hrs after the injection.
3. Body weight measurements should be made immediately before dosing, daily for the first three days after dosing.

F. Animal observation and items for examination

1. Determination of the reaction

After inject treatment, the symptoms responses at 24, 48 and 72 h were checked and evaluated, according to "Common clinical signs and observations" (Appendix 3). If two or more animals show either marked symptoms of toxicity or die, or if a body weight loss greater than 10 % occurs in three or more animals, then the sample does not meet the requirements of the test. If animals show slight signs of toxicity, and not more than one animal shows marked symptoms of toxicity or dies, repeat the test using group of ten mice each.

2. Animal management

Autopsy would be performed immediately for those animals found dead.

## Results

The results showed that there were no significant clinical signs and obvious weight loss in either the control or treatment group, and there were no mortalities (Table 1, Appendix 1~2).

## Conclusion

The study results showed that a single application of "Transducer Protector" extract induced neither observable clinical signs nor significant weight loss in mice at each time point. Therefore, the "Transducer Protector" extract did not cause toxicity reaction or death after intraperitoneal injection in mice.

## References


1. Good Laboratory Practice for Nonclinical Laboratory Studies (2000) Department of Health, the Executive Yuan.

2. Good Laboratory Practice for Nonclinical Laboratory Studies. Title 21 of the U.S. Code of Federal Regulations, Part 58 (1997) United States Food and Drug Administration.

3. Standard Practice for Evaluating Material Extracts by Systemic Injection in the Mouse, ASTM F750 - 87(2007)e1.

4. Biological evaluation of medical devices-Part 11：Tests for systemic toxicity BS EN ISO 10993 (2009), ISO.

5. Biological evaluation of medical devices-Part 12：Sample preparation and reference materials ISO 10993 (2012), ISO.

6. Current OECD Principles of Good Laboratory Practice (Organization for Economic Cooperation and Development, Paris, ENV/MC/CHEM (98) 17).

## Table 1. Incidence of Clinical Observation in mice

| Group (0.9% saline) | Control | Treatment |
|---|---|---|
| **Number of animals** | 5 | 5 |
| **Treated article** | 0.9% saline | Test article extract |
| **Toxicity reaction** | 0/5 | 0/5 |
| **Death** | 0/5 | 0/5 |

n/n：No. of mice with clinical signs/No. of mice per group

## Appendix 1. Individual Animal Grade in Clinical Observation of Mice

| | Treated article | Sex | Animal No. | Items for Grading | Clinical Observation (time point/h) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | 24 | 48 | 72 |
| Control group | 0.9% saline | F | AS-C1 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | AS-C2 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | AS-C3 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | AS-C4 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | AS-C5 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| Treatment group | Test article extract | F | 130803-AS-01 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | 130803-AS-02 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | 130803-AS-03 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | 130803-AS-04 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |
| | | F | 130803-AS-05 | Toxicity reaction | n | n | n | n |
| | | | | Death | n | n | n | n |

M: male n: no symptom

## Appendix 2. Body weight

| Group | Dose (ml/kg) | Sex | Animal No. | Body weight (g) | | | |
|---|---|---|---|---|---|---|---|
| | | | | 0hr | 24hr | 48hr | 72hr |
| Control (0.9% saline) | 50 | female | AS-C1 | 24.0 | 24.8 | 25.6 | 26.5 |
| | | | AS-C2 | 22.7 | 25.0 | 26.0 | 25.7 |
| | | | AS-C3 | 24.5 | 26.0 | 26.1 | 25.7 |
| | | | AS-C4 | 22.6 | 24.6 | 25.5 | 25.5 |
| | | | AS-C5 | 21.1 | 22.8 | 22.9 | 23.3 |
| Test (Test article extract) | 50 | female | 130803-AS-01 | 20.9 | 24.3 | 25.6 | 25.6 |
| | | | 130803-AS-02 | 23.6 | 25.5 | 26.2 | 26.0 |
| | | | 130803-AS-03 | 23.5 | 24.0 | 24.7 | 25.6 |
| | | | 130803-AS-04 | 22.6 | 23.2 | 23.8 | 24.3 |
| | | | 130803-AS-05 | 22.6 | 23.7 | 24.5 | 24.0 |

## Appendix 3. Common clinical signs and observations

## (BS EN ISO 10993-11)

| Clinical observation | Observed sign | Involved system(s) |
|---|---|---|
| Respiratory | Dyspnea (abdominal breathing, gasping), apnoea, cyanosis, tachypnea, nostril discharges | CNS, pulmonary, cardiac |
| Motor activities | Decrease/increase somnolence, loss of righting, anaesthesia, catalepsy, ataxia, unusual locomotion, prostration, tremors, fasciculation | CNS, somatomotor, sensory, neuromuscular, autonomic |
| Convulsion | Clonic, tonic, tonic-clonic, asphyxial, opisthotonos | CNS, neuromuscular, autonomic, respiratory |
| Reflexes | Corneal, righting, myotact, light, startle reflex | CNS, sensory, autonomic, neuromuscular, |
| Ocular signs | Lacrimation, miosis, mydriasis, exophthalmos, ptosis, opacity, iritis, conjunctivitis, chromodacryorrhea, relaxation of nictitating membrane | Autonomic, irritation |
| Cardiovascular signs | Bradycardia, tachycardia, arrhythmia, vasodilation, vasoconstriction, | CNS, autonomic, cardiac, pulmonary |
| Salivation | Excessive | Autonomic |
| Piloerection | Rough hair | Autonomic |
| Analgesia | Decrease reaction | CNS, sensory |
| Muscle tone | Hypotonia, hypertonia | Autonomic |
| Gastrointestinal | Soft stool, diaorrhea, emesis, diuresis, rhinorrhea | CNS, autonomic, sensory, GI motility, kidney |
| Skin | Edema, Erythema | Tissue damage, irritation |

## TEST ARTICLE PHOTO