[redacted]

ESC-201702

A Prospective, Multi-center, Randomized Controlled Study Evaluating the Efficacy and Safety of Two Types of Absorbable Surgical Sutures in the Suturing of Thyroid Surgery Incision

Name of investigational medical device	1. Absorbable Surgical Suture（[redacted] Knotless Tissue Control Device） 2. Absorbable Surgical Suture（[redacted] Knotless Tissue Control Device）
Model/Specification	See Appendix
Management category of investigational medical device	Class III medical device that needs the approval for clinical trial Y N☑ Similar product in same category in China Y N☑
Protocol version number	V2.0
Protocol version date	2019-09-30
Clinical trial institution	The [redacted]
Investigator	[redacted]
Sponsor	[redacted] LLC
Agent	[redacted]

Revision Record

Revised version	*Revision date*	*Description of changes*
2.0	*Sep 30 2019*	*1. 7.2.1 Flow diagram of clinical trial：* *Project/Withdraw visit* *Event/time point/Discharge or after ICF withdrawal* *h. Including incisional wound separation or wound dehiscence requiring intervention, target incisional wound healing delay, etc. For subjects who are randomized but without any of study sutures used for incision closure, this visit is conducted at discharge. For subjects who withdraw ICF, this visit is conducted as early as possible with subjects' permission. Telephone visit is acceptable.* *Changed to：* *Project/Withdraw visit* *Event/time point/For subjects randomized but without any of study sutures used and for subjects who withdraw ICF [i]* *h. Including incisional wound separation or wound dehiscence requiring intervention, target incisional wound healing delay, etc.* *i. For subjects who are randomized but without any of study sutures used for incision closure, this visit is conducted as early as possible. For subjects who withdraw ICF, this visit is conducted as early as possible with subjects' permission. Telephone visit is acceptable.* *2. 7.2.3 Study Procedures* *6) Withdraw visit – Discharge or after ICF withdrawal* *For subjects who are randomized but without any of study sutures used for incision closure, this visit is conducted at discharge. For subjects who withdraw ICF, this visit is conducted as early as possible with subjects' permission. Telephone visit is acceptable.*

		Changed to： ***6) Withdraw visit –For subjects randomized but without any of study sutures used and for subjects who withdraw ICF*** ***For subjects who are randomized but without any of study sutures used for incision closure, this visit is conducted as early as possible. For subjects who withdraw ICF, this visit is conducted as early as possible with subjects' permission. Telephone visit is acceptable.*** ***3. 8.8 Selection Criteria and Reason of Subjects Included in the Analysis:*** ***PP (evaluable) Set contains all the subjects in the FAS who have no major protocol deviation and have data available for primary efficacy endpoint and do not meet any of the following criteria:*** ***o Intraoperative use of other auxiliary incision(s) at the neck or combination with other surgical procedures except thyroidectomy (except the dissection of lymph nodes in the VI area);*** ***Changed to：*** ***PP (evaluable) Set contains all the subjects in the FAS who have no major protocol deviation, have data available for primary efficacy endpoint and do not meet any of the following criteria:*** ***o Subject undergoes any of the following procedures, in addition to thyroidectomy：*** ***1、 Any surgical procedure which require additional neck incisions or extend the original incision;*** ***2、 Cervical lymph node dissection (except the dissection of lymph nodes in the VI area);*** ***3、 Other unplanned surgical procedures (except the procedure that the investigator doesn't think it will affect the original incision's healing)***

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Abbreviations

Acronyms / Abbreviations	Terms
ACP	Acyl carrier protein
ACS	American College of Surgeons
AE	Adverse event
CDC	Centers for Disease Control and Prevention
CRO	Contract Research Organization
EC	Ethics Committee
EMS	Express Mail Service
EQ-5D-5L	European Quality of Life-5 Dimensions, 5 Levels Scale
e-CRF	Electronic Case Report Form
FAS	Full analysis set
FPG	Fasting plasma glucose
ICF	Informed Consent Form
IFU	Instructions for Use
LLC	Limited Liability Company
[redacted]	[redacted]
[redacted]	[redacted]
PP	Per Protocol
SAE	Serious adverse event
SOP	standard operating procedure
SSI	Surgical site infection
VAS	Visual Analogue Scale
WHO	World Health Organization

Synopsis

<table>
<tr><td>Study Title</td><td>A Prospective, Multi-center, Randomized Controlled Study Evaluating the Efficacy and Safety of Two Types of Absorbable Surgical Sutures in the Suturing of Thyroid Surgery Incision</td></tr>
<tr><td>Study Objective</td><td>The primary objective of this study is to evaluate the efficacy and safety of two types of absorbable surgical sutures -- [redacted] Knotless Plus Tissue Control Device and [redacted] Knotless Tissue Control Device (hereinafter referred to as [redacted] and [redacted]) used in thyroid surgery to suture surgical incision.</td></tr>
<tr><td>Number of Study Sites</td><td>Planned selection of 10 sites</td></tr>
<tr><td>Number of subjects</td><td>Planned enrollment of 501 subjects</td></tr>
<tr><td>Study Design</td><td>This study adopts a multicenter, prospective, randomized controlled design. The study population are subjects who undergo thyroid surgery.
Before the surgery, subjects are randomized in 1:1:1 ratio to the investigational group 1 (using [redacted]), investigational group 2 (using [redacted]) and control group. See the table below for the specific suture levels, materials and techniques of each group.
<table>
<tr><td rowspan="2">Level</td><td colspan="3">Suture Material (Technique)</td></tr>
<tr><td>Investigational group 1</td><td>Investigational group2</td><td>Control group</td></tr>
<tr><td>Ribbon muscles</td><td>[redacted] (Continuous)</td><td>[redacted] (Continuous)</td><td>[redacted] (Continuous)</td></tr>
<tr><td>Platysma</td><td colspan="3">[redacted] (Interrupted)</td></tr>
<tr><td>Intradermal</td><td>[redacted] (Continuous)</td><td>[redacted] (Continuous)</td><td>[redacted] (Continuous)</td></tr>
</table>
A blinded central imaging evaluation will be performed on the healing condition of surgical incision on Day 5-7 post-surgery. The subjects will be blinded to the type of suture used for wound closure.</td></tr>
</table>

Study Device	[redacted] absorbable surgical suture is an antibacterial monofilament, synthetic absorbable device consisting of dyed (violet) polyester, i.e. poly(p-dioxanone), the empirical molecular formula of which is $(C_4H_6O_3)_X$. As the device is designed with barbs, it allows tissue approximation without the need to tie surgical knots. The device contains IRGACARE® MP (triclosan), a broad spectrum antibacterial agent, at no more than 2,360 μg/m. The pigment for the violet dye is D&C Violet No.2. Polydioxanone polymer has been found to be nonallergenic, nonpyrogenic and elicits only a slight tissue reaction during absorption. [redacted] absorbable surgical suture is an antibacterial monofilament, synthetic absorbable device prepared from a copolymer of glycolide and ε-caprolactone (Poliglecaprone 25). As the device is designed with barbs, it allows tissue approximation without the need to tie surgical knots. The device contains IRGACARE® MP (triclosan), a broad spectrum antibacterial agent, at no more than 2,360 μg/m. Poliglecaprone 25 copolymer has been found to be nonpyrogenic and elicits only a slight tissue reaction during absorption.
Inclusion Criteria	Subjects will be included if ALL of the following inclusion criteria applies: 1) The subject is ≥18, and <70 years old 2) Planned open thyroid surgery, adopting an anterior cervical curved incision (Kocher's incision); 3) Subject who volunteers to participate in this study, follows the study requirements and follow-up visit and signs the written Informed Consent Form voluntarily; 4) Subject who agrees to not schedule any elective surgical operation except the study surgery before the study is completed; 5) The investigator considers the subject's expected postoperative survival time is not less than 3 months.
Exclusion Criteria	Subjects will be excluded if ANY of the following exclusion criteria applies: 1) Female subjects who are pregnant or lactation at screening; 2) Preoperative clinical staging shows stage IV thyroid cancer, or cervical lymph nodes dissection is planned; 3) Suspected or confirmed anaplastic thyroid cancer; 4) Peripheral vascular disease affecting blood supply of the

	neck; 5) Active infectious collagenosis (e.g. scleroderma), or any other disease that would interfere with wound healing; 6) Fasting plasma glucose ≥7.7 mmol/L; 7) History of coagulation diseases; 8) Current oral or intravenous antibiotic therapy for existing disease or infection; 9) History of immunosuppressant use (e.g. steroids) within the last 6 months; 10) Chemotherapy or radiotherapy within the last 6 months, or planned chemotherapy or radiotherapy during the study; 11) Personal or family history of keloid formation or hyperplasia; 12) Current participation in any other drug (within 30 days or within 5 half-lives of the investigational drug) or device clinical study; 13) History of any thyroid surgery, except thyroid fine-needle aspiration biopsy; 14) Planned use of skin adhesive at the incision site; 15) The subject is not suitable for participating in this study for any other reasons, as judged by the investigator.
Endpoints	Primary Efficacy Endpoint: Proportion of subjects achieving Grade A healing of surgical incision(success) in each group. Wound healing grade will be assessed by independent, blinded Central Imaging evaluators using (a picture of complete neck anterior view, containing full length of the incision) on Day 5-7 post-surgery. Secondary Efficacy Endpoints: 1. Incision suturing time, defined as the time required from the first needle insertion for stitching ribbon muscles to the completion of intradermal suture (min) 2. Modified Hollander Wound Evaluation Scale [assessed by Central Imaging evaluators using pictures, including a picture of complete neck anterior view containing full length of the incision, a picture taken parallel to the incision plane, a picture taken at a 45° angle to the incision plane, and incision lateral view pictures of both sides (one for each)]; 3. Postoperative incision pain score (Visual Analogue Scale, VAS); 4. Health related quality of life scale (EQ-5D-5L).

	Safety Endpoints include: 1. Incidence of postoperative surgical site infection (SSI); 2. ASEPSIS score (only assessed in subjects with confirmed SSI); 3. Incidence of incisional wound separation or wound dehiscence requiring intervention; 4. Incidence of delayed incisional wound healing events; 5. Incidence of other adverse events; 6. Product complaints.

1. Sponsor Information

(1) Name of Sponsor

[redacted] LLC

(2) Address of Sponsor

[redacted]

(3) Contact of Sponsor

Contact: [redacted]

Tel: 001 [redacted]

E-mail: [redacted]

Address: [redacted]

(4) Related qualification documents of Sponsor:

Related qualification documents of sponsor included (ISO 13485 certificate, 510K certificate about the product's marketing in USA). See related documents.

(5) Name, address, contact and related qualification documents of agent:

[redacted]

[redacted].

E-mail: [redacted]

Tel: [redacted]

[redacted].

Related qualification documents of agent include (company business license, medical device business license). See related materials

2. List of Clinical Trial Institutions and Investigators

See related materials.

3. Objective and Contents of Clinical Trial

3.1 Objective of Clinical Trial

The primary objective of this study is to evaluate the efficacy and safety of two types of absorbable surgical sutures -- [redacted] Knotless Plus Tissue Control Device and [redacted] Plus Knotless Tissue Control Device (hereinafter referred to as [redacted] and [redacted]) used in thyroid surgery to suture surgical incision.

3.2. Contents of the Clinical Trial

This study is designed to be a three-arm, prospective, multicenter, randomized controlled study, comparing the efficacy (non-inferiority tests) and safety of [redacted] and [redacted] with the control group ([redacted] with [redacted]) in soft tissue suturing.

The study population includes 501 cases of subjects who plan to receive thyroid surgery. The subjects are randomized into the investigational group 1 (using [redacted]), investigational group 2 (using [redacted]) and control group (using [redacted] and [redacted] according to the ratio of 1:1:1. See the table below for the specific suture levels, materials and techniques of each group.

Level	Suture Material (Technique)		
	Investigational group 1	Investigational group2	Control group
Ribbon muscles	[redacted] **(Continuous)**	[redacted] **(Continuous)**	[redacted] **(Continuous)**
Platysma	[redacted] (Interrupted)		
Intradermal	[redacted] **(Continuous)**	[redacted] **(Continuous)**	[redacted] **(Continuous)**

The above subjects will be followed up on Day 5-7 and Day 28-35 post-surgery, respectively. The primary endpoint is the proportion of subjects achieving Grade A healing of surgical incision in each group, central blinded evaluation will be performed on the incision pictures taken on Day 5-7 post-surgery; secondary endpoints include: incision suturing time, modified Hollander Wound Evaluation Scale, postoperative incision pain score, health related quality of life scale; safety endpoints include: incidence of postoperative surgical site infection (SSI), ASEPSIS score, incidence of incisional wound separation or wound dehiscence requiring intervention, incidence of delayed incisional wound healing events, incidence of other adverse events (AE), and product complaints.

4. Background Information of Clinical Trial

4.1 Introduction to the Condition and Investigational Products

Thyroid surgery is a very common type of wound cleaning surgery and with the development of surgical techniques and continuous improvement in people's pursuit of beauty, patients pay more and more attention to the appearance of incision after thyroid surgery. Surgeons have to choose appropriate surgical incision and approach, suture technique and material, minimize damage at different anatomical layers, reduce incision scar, decrease penetrance of scar and improve patients' quality of life, on the condition that the quality of thyroid surgery is guaranteed. At present, from the perspective of surgical approach, thyroid surgery is mainly done via open and endoscopic approaches and if an open surgery is done, an anterior cervical curved incision (Kocher's incision) is mainly adopted, while other incisions are not as commonly used as before. Since open thyroid surgery has a big base, there has been certain consensus on the use of intradermal continuous suture to reduce penetrance of scar clinically, and therefore the anterior cervical curved incision is selected for the thyroid surgery in this study.

In this study, the investigational products are two types of absorbable surgical sutures, and compared to traditional sutures, these two sutures are both knotless, surgical sutures containing an antibacterial agent (triclosan), except one of them consists of poly(p-dioxanone) and another is prepared from a copolymer of glycolide and ε-caprolactone.

The knotless function of the investigational products is realized by forming barbs via cutting the suture body, and such a design has been extensively applied in knotless sutures and has been demonstrated to be qualified for wound stitching (including high tensile tissues) and to reduce surgery (suture) time by lots of clinical studies and literature [1-5]. Besides, the decrease in surgery time is also related to the reduction of wound complications, especially SSI [6].

In addition, the investigational product also contains an antibacterial agent to resist SSI (nonantibacterial launched products have been marketed in China). The antibacterial agent contained is triclosan, which, at a low concentration, can interact with the acryl carrier protein (ACP) reductase (FabI) of sensitive bacteria and subsequently inhibit the formation of sensitive bacterial fatty acids to achieve an antibacterial effect [7]. It has been confirmed both in in vivo and in vitro experiments that, triclosan-containing sutures can effectively resist colonization of sensitive bacteria, including *Staphylococcus aureus*, *Staphylococcus epidermidis*, methicillin-resistant *Staphylococcus aureus*, methicillin-resistant *Staphylococcus epidermidis*, *Klebsiella pneumoniae* and *Escherichia coli* [8-10]. In the meantime, it has also been shown by clinical studies that, such an effect also works in human body to reduce about 30% of SSIs [11-12]. Based on the great clinical efficacy and safety in clinical application of such sutures, World Health Organization (WHO), American College of Surgeons and US Centers for Disease Control and Prevention (CDC) all recommend the application of knotless sutures in surgeries to prevent SSI in their guidelines [13-15].

To sum up, the investigational products will be new products with two kinds of relatively mature suture processes applied in the same type of suture. This study will demonstrate the investigational products' efficacy in wound closure in thyroid surgery and safety in clinical application, to support the marketing of the products in China.

4.2 Application of Investigational Products and Control Products

The investigational products have been granted with 510K clearance by the country of origin USA in 2015. Currently the products have been marketed in many countries, however, due to the short marketing time, they have not been reported in literature yet.

Both the control products [redacted] and [redacted] are non-barbed, triclosan-coated sutures. Such sutures have been marketed in China since 2014. As mentioned above, the efficacy and safety of such sutures have been sufficiently validated [11-12, 16].

4.3 Product Registration and Reason for Clinical Trial Registration in China

The investigational products were granted with 510K marketing clearance by the country of origin USA in 2015 and was granted with EU marketing authorization (CE certificate) in 2016. To support the marketing of the investigational products in China and according to the requirements of China's *Guidelines for Medical Evaluation of Medical Devices*, the study selects non-barbed [redacted] and [redacted] as launched products. The difference between the investigational products and launched products lies in whether they contain barbs or not. Therefore, the clinical trial design is to demonstrate that the barbed nature of the suture does not have any adverse impact on the safety and efficacy of the products.

5. Features, Structural Composition, Operation Principle, Mechanism of Action, and Study Population

5.1 Features

Type	Name of device	Design Features	Characteristics of Material
Investigational Product 1	[redacted]	This product is an antibacterial monofilament absorbable suture consisting of barbed suture material. Its barbs allow tissue approximation without the need to tie surgical knots. The suture contains triclosan, an antibacterial agent, which is only used to inhibit colonization of bacteria on sutures.	The suture material is polyester, i.e. poly(p-dioxanone), the empirical molecular formula of which is $(C_4H_6O_3)x$.

Investigational Product 2	[redacted]	This product is an antibacterial monofilament absorbable suture prepared from barbed suture material. Its barbs allow tissue approximation without the need to tie surgical knots. The suture contains triclosan, an antibacterial agent, which is only used to inhibit colonization of bacteria on sutures.	The suture material is prepared from Poliglecaprone 25 (i.e. a copolymer of glycolide and ε-caprolactone).

5.2. Structural Composition, Operation Principle, Mechanism of Action

The study products are both absorbable surgical sutures armed with a surgical needle to suture soft tissues. The study products contain a fixation loop and barbs to anchor tissues and do not require knots to secure the device. The sutures contain triclosan, am antibacterial substance that is only used to inhibit colonization of bacteria on sutures.

Using the [redacted] suture in sizes 3-0 or larger, approximately 80% of its original strength remains after at two weeks and four weeks of implantation. At six weeks post implantation, approximately 40% to 70% of its original strength is retained. For size 4-0, approximately 67% of its original strength remains after two weeks, and approximately 50% at four weeks of implantation. At six weeks post implantation, approximately 37% of its original strength is retained. Data obtained from implantation studies show the absorption of [redacted] suture is essentially complete within 210 days. Using the [redacted] suture, approximately 62% of its original tensile strength remains after 7 days implantation; and approximately 27% of its original tensile strength at 14 days post implantation. All of the original tensile strength is lost by 21 days post implantation. The absolute strength remaining 14 days post implantation meets or exceeds that historically observed with plain or chromic surgical gut devices. Data obtained from implantation studies show that absorption of [redacted] suture is essentially complete by 91 days.

The product schematic diagram is as follows:

[redacted]

Unidirectional barbs Bidirectional barbs

Artificial synthetic absorbable sutures are used to temporarily align edges of wound, until it is fully healed and able to withstand normal stress. It design is armed with predictable degradation and absorption rates.

5.3 Study Population

This clinical study will include subjects who undergo thyroid surgery via an anterior cervical arch incision (Kocher's incision).

6. Indications and Contraindications, Precautions

6.1 [redacted]:

[Indication]: It is indicated for use in soft tissue approximation where the use of absorbable sutures is appropriate.

[Contraindications]: It is not to be used where prolonged (beyond six weeks) approximation of tissues under stress is required and is not be used for fixation of or in conjunction with prosthetic

devices (e.g. heart valves or synthetic grafts) that are nonabsorbable in nature. This device, being absorbable, should not be used where extended approximation of tissue under stress is required, such as in fascia. The device should not be used in patients with known allergic reactions to IRGACARE®* MP (triclosan).

[Precautions]: The device contains a fixation loop and barbs to anchor tissues and do not require knots to secure the device. Tying of knots on the barbed section of the device will damage the barbs and potentially reduce their efficacy. For the device to function properly, the device must first be anchored in robust tissue using the fixation loop. Then subsequently engage the barbs into the tissue in a standard closure pattern. When completing placement of the barbed segment in subcuticular tissue, take at least one additional pass in the reverse direction to lock the device in place. In all other tissue layers, take at least two passes in the reverse reaction to lock the device in place.

Avoid contacting the device with other materials (e.g. surgical gauze, drapes, etc.) in the surgical field to prevent ensnaring on the barbs. If the barbs catch, carefully pull the material in the opposite direction of the needle to disengage it from barbs.

When using the device subcutaneously, the device should be placed as deeply as possible in order to minimize erythema and induration normally associated with absorption.

Care should be taken to avoid damage when handling the device. Avoid crushing or crimping the suture material with surgical instruments (e.g. needle holders or forceps). Do not attempt to remove memory in the polymer by running fingers down the suture material as this can damage the barbs.

Infections, erythema, foreign body reactions, transient inflammatory reactions and in rare instances wound separation are typical or foreseeable risks associated with any suture and hence are also potential complications associated with the device.

Acceptable surgical practice should be followed with respect to drainage and closure of infected wounds. To avoid damaging needle points and swage areas, grasp the needle in an area one-third (1/3) to one-half (1/2) of the distance from the swaged end to the point. Reshaping needles may cause them to lose strength and be less resistant to bending and breaking. Users should exercise caution when handling surgical needles to avoid inadvertent needle sticks. Discard used needles in designated biohazard “sharps” containers.

Store at or below 30℃.

6.2 [redacted]:

[Indication]: It is indicated for use in soft tissue approximation where the use of absorbable sutures is appropriate.

[Contraindications]: It is not to be used where prolonged approximation of tissues under stress is required and is not be used for fixation of or in conjunction with prosthetic devices (e.g. heart valves or synthetic grafts) that are nonabsorbable in nature. This device, being absorbable, should not be used where extended approximation of tissue under stress is required, such as in fascia. The device should not be used in patients with known allergic reactions to IRGACARE®* MP (triclosan).

[Precautions]: The device contains a fixation loop and barbs to anchor tissues and do not require knots to secure the device. Tying of knots on the barbed section of the device will damage the barbs and potentially reduce their efficacy. For the device to function properly, the device must first be anchored by using the fixation loop in robust tissue. Then subsequently engage the barbs into the tissue in a standard closure pattern. When completing placement of the barbed segment in subcuticular tissue, take at least one additional pass in the reverse direction to lock the device in place.

Avoid contacting the device with other materials (e.g. surgical gauze, drapes, etc.) in the surgical field to prevent ensnaring on the barbs. If the barbs catch, carefully pull the material in the opposite direction of the needle to disengage it from barbs.

Skin devices that remain in place longer than 7 days may cause localized irritation and should be snipped off or removed if indicated. Subcuticular devices should be placed as deeply as possible to minimize the erythema and induration normally associated with absorption

Under some circumstances, notably orthopedic procedures, immobilization of joints by external support may be employed at the discretion of the surgeon. Consideration should be taken in the use of absorbable devices in tissue with poor blood supply as device extrusion and delayed absorption may occur. In handling this or any other device material, care should be taken to avoid damage from handling.

Avoid crushing or crimping damage due to application of surgical instruments (e.g. forceps or needle holders). Do not attempt to remove memory in the polymer by running fingers down the suture material as this can damage the barbs.

Infections, erythema, foreign body reactions, transient inflammatory reactions and in rare instances wound separation are typical or foreseeable risks associated with any suture and hence are also potential complications associated with the device.

Acceptable surgical practice should be followed with respect to drainage and closure of infected wounds. To avoid damaging needle points and swage areas, grasp the needle in an area one-third (1/3) to one-half (1/2) of the distance from the swaged end to the point. Reshaping needles may cause them to lose strength and be less resistant to bending and breaking. Users should exercise caution when handling surgical needles to avoid inadvertent needle sticks. Discard used needles in “sharps” containers.

Store at or below 30℃.

7. Overall Design

7.1 Trial Design

7.1.1. Trial Objective

The primary objective of the study is to evaluate the of [redacted] or [redacted] in thyroid surgery to suture surgical incision.

7.1.2 Trial Method Selection and Its Rationale

According to the regulatory requirements of the Guidelines for Technical Review of Absorbable Surgical Suture Registration, a prospective, randomized controlled design should be adopted to compare the investigational device with launched product. Therefore, this study adopts a prospective, multicenter, randomized controlled trial design.

7.1.3 Measures to Reduce and Avoid Bias

In the study, central randomization will be adopted to randomly assign eligible subjects to one of the three groups: investigational group 1, investigational group 2 or control group according to the same inclusion/exclusion criteria to reduce the impact caused by unknown confounding factors and avoid selection bias.

Study blinding is as follows:

- Subject: Subjects are informed prior to surgery that they will be randomized to any of the study groups with equal probability, and during the surgery, a blinding method will be adopted for them.
- Investigator responsible for incision suture: Considering the investigational groups and

control group use different shapes and usages of suture, it is impossible to blind investigators who are responsible for suturing.

- Central evaluator: Imaging data will be submitted to Imaging Center for assessment to assess the primary endpoint and the modified Hollander score among secondary endpoints. The Central Imaging evaluators will be blinded.
- Monitor: As the product information is specified on the detachable label supplied with the product and instrument counting and source document verification is - done with the study product inventory records and subject's medical record, the monitor will not be blinded.

In addition, this study will collect data about objective measures, study related information will be recorded in the source medical records as detailed as possible, the monitor will pay attention to verifying the data in the source medical records during the monitoring process, investigator training will be strengthened, and investigators will closely communicate with subjects to improve compliance of subjects. This will help to reduce the informational bias.

7.1.4 Investigational Medical Devices and Control Medical Devices

	Investigational Device 1 [redacted]	Investigational Device 2 [redacted]	Control Device [redacted] or [redacted]
Picture	[redacted]		
Launch the global market (year)	Global: 2016	Global: 2016	Global: 2006 China: 2014
Indications	Indicated for use in soft tissue approximation where the use of absorbable sutures is appropriate	Indicated for use in soft tissue approximation where the use of absorbable sutures is appropriate	[redacted]: Indicated for use in soft tissue approximation, including use in pediatric cardiovascular tissue where growth is expected to occur and ophthalmic surgery (other than contact with cornea and sclera). [redacted] suture is not indicated in adult cardiovascular tissue, microsurgery and neural tissue. These sutures are particularly useful where the combination of an absorbable suture and extended wound support (up to six weeks) is desirable. [redacted]: Indicated for use in general soft tissue approximation and/or ligation, but not for use in cardiovascular or neurological tissues, microsurgery or ophthalmic surgery.
Components	Suture, surgical needle	Suture, surgical needle	Suture, surgical needle
Size	4-0 to 1	4-0 to 2-0	[redacted]:6-0 to 1

			[redacted]:6-0 to 1
Materials	Poly(p-dioxanone)	Poliglecaprone 25 (i.e. a copolymer of glycolide and ε-caprolactone)	[redacted]: Poly(p-dioxanone) [redacted]:Poliglecaprone 25 (i.e. a copolymer of glycolide and ε-caprolactone)

7.1.5 Subject Selection

1) Inclusion criteria

1. The subject is ≥18, and <70 years old
2. Planned open thyroid surgery, adopting an anterior cervical curved incision (Kocher's incision);
3. Subject who volunteers to participate in this study, follows the study requirements and follow-up visit and signs the written Informed Consent Form voluntarily;
4. Subject who agrees to not schedule any elective surgical operation except the study surgery before the study is completed;
5. The investigator considers the subject's expected postoperative survival time is not less than 3 months.

2) Exclusion Criteria

1. Female subjects who are pregnant or lactation at screening;
2. Preoperative clinical staging shows stage IV thyroid cancer, or cervical lymph nodes dissection is planned;
3. Suspected or confirmed anaplastic thyroid cancer;
4. Peripheral vascular disease affecting blood supply of the neck;
5. Active infectious collagenosis (e.g. scleroderma), or any other disease that would interfere with the wound closure;
6. Fasting plasma glucose (FPG) ≥7.7 mmol/L;
7. History of coagulation diseases;
8. Current oral or intravenous antibiotic therapy for existing disease or infection;
9. History of immunosuppressant use (e.g. steroids) within the last 6 months;
10. Chemotherapy or radiotherapy within the last 6 months, or planned chemotherapy or radiotherapy during the study;
11. Personal or family history of keloid formation or hyperplasia;
12. Current participation in any other drug (within 30 days or within 5 half-lives of the investigational drug) or device clinical study;
13. History of any thyroid surgery, except thyroid fine-needle aspiration biopsy;
14. Planned use of skin adhesive at the incision site;
15. The subject is not suitable for participating in this study for any other reasons, as judged by the investigator.

3) Criteria and procedure of Study Discontinuation

The criteria for Subject's Discontinuation from Study include, but are not limited to:

1. Withdrawal of consent: Subject decides to withdraw from the study. This decision must be "self-determination" and should be documented;
2. Investigator's judgement: The Investigator may determine the withdrawal of subjects from the study according to reasonable medical judgement and such withdrawal may benefit the subject mostly.
3. Adverse event (AE)/Serious Adverse event (SAE: The AE or SAE may not cause the subjects to discontinue the study treatment. If the investigator decides to withdraw a subject from the study, this subject must be followed up, until the AE/SAE is resolved or until the stable clinical endpoint is reached;

4. Subject died;
5. Lost to follow-up: All subjects should be able to participate in all scheduled visits, providing the appropriate contact information. If a subject can't return to undergo the scheduled clinical visit, attempts to contact the subject by phone should be done 3 times to ask the subject to participate in all scheduled visits. Each attempt to contact should be recorded in the source document. If the subject fails to respond to all three telephone contact attempts, the Investigator must send a registered mail or Express Mail Service (EMS) . If the subject fails to respond to the registered mail or EMS and makes no further contact, the subject is considered lost-follow-up and the eCRF at the end of study must be completed;
6. The Sponsor discontinues the study;
7. The health regulatory agency requests discontinuation of the study.

Procedure for subject's discontinuation from the trial:

Subjects should stay in this study until the 28-35day follow-up visit defined in the study protocol is completed. If a subject withdraws from this study prematurely, the reason for withdrawal must be recorded in the source record and the investigational study file will be submitted via e-CRF.

Subjects who are withdrawn from the study early will be included in the analysis of results; however, no new subjects will be recruited to replace the subjects withdrawn from the study.

Criteria of Sponsor's Discontinuation of the Trial:

The Sponsor has the right to terminate the study early for a single site, multiple sites or all sites temporarily or permanently. Reasons may include but are not limited to: safety issue or ethical issue, inaccurate or incomplete data record, non-compliance or dissatisfactory quality of the study recruitment.

Flow of Sponsor's Discontinuation of the Trial:

When deciding to suspend or terminate the clinical trial, the Sponsor should inform all the clinical trial institutions and medical device clinical trial regulatory departments and give written explanations. The clinical trial institutions and medical device clinical trial regulatory departments should inform corresponding investigators and ECs timely. A suspended clinical trial cannot be restored without the approval of EC.

4) Enrollment

Subjects will be considered enrolled into the study upon satisfaction of the following criteria:

- Completion of the informed consent process;
- It is determined by the Investigator that the subject meets all inclusion criteria and does not meet any exclusion criteria;
- Completion of randomization.

No procedures related to the study should be conducted prior to signing the informed consent.

5) Expected overall duration of clinical trial and reasons for determination

The expected overall duration is approximately 26 months, including the time that each site's Ethics Committee approval, institution contract sign-off, duration of follow-up, time for data management, statistical analysis, and time to write the clinical study report.

6) Expected duration of participation of each subject

The duration of each subject's participation in the study will be 28-35 days according to the follow-up schedule specified by the protocol.

7) Number of subjects required for clinical trial

Approximately five hundred and one (501 subjects will be enrolled in this study, of which 167

subjects in investigational group 1, investigational group 2, and control group, respectively. See Section 8.2 Calculation of Sample Size for the basis for selecting this sample size.

7.1.6 Efficacy Evaluation Method

1) Description of efficacy parameters

The primary efficacy endpoint is defined as the proportion of subjects achieving Grade A healing (success) of surgical incision in each group.

According to clinical routine practice, wound healing status should be assessed during removal of stitches of incision and generally, stitches at the incision of head, face and neck are taken out on Day 4-5 post-surgery; however, if energy devices are used (e.g. electrotome), the removal of stitches should be delayed by 1-2 days. In this study, all the skin layers can be performed with intradermal continuous suture using absorbable sutures, thus it is unnecessary to take out stitches at the incision. Therefore, the time of wound healing assessment in this study is set as Day 5-7 post-surgery.

Wound healing status is classified into three grades:

- Grade A healing: Good healing with no adverse reaction;
- Grade B healing: Inflammatory reaction(s) at the healing, such as red swelling, induration, hematoma, effusion, etc., but without suppuration;
- Grade C healing: Suppuration of incision, requiring incision and drainage and other treatments.

Secondary Efficacy Endpoints include:

1. Incision suturing time, defined as the time required from the first needle insertion for stitching ribbon muscles to the completion of intradermal suture (min);
2. Modified Hollander Wound Evaluation Scale (see Annex 3), assessed by Imaging Center evaluators using pictures, including: a picture of complete neck anterior view containing full length of the incision, a picture taken parallel to the incision plane, a picture taken at a 45° angle to the incision plane, and incision lateral view pictures of both sides (one for each);
3. Postoperative incision pain score (VAS scale, see Annex 4-1);
4. Health related quality of life scale (EQ-5D-5L): Subjects are required to select the most appropriate levels in 5 aspects to determine their health status (see Annex 5):
    - Motility
    - Self care
    - Daily activities
    - Pain/discomfort
    - Anxiety/depression

2) Selection of method and time to evaluate, record and analyze the efficacy parameters

The primary efficacy endpoint (wound healing grade) will be assessed by independent, blinded Imaging Center according to the picture (a picture of complete neck anterior view, containing full length of the incision) on Day 5-7 post-surgery and documented in the e-CRF.

The secondary efficacy endpoints will be documented in the e-CRF according to the investigator's records, Imaging Center evaluator's assessment records (modified Hollander Wound Evaluation Scale) and questionnaires completed by the subject (postoperative incision pain score, EQ-5D-5L) and will be collected at V3, V4 and V5.

See Section 8 for the analysis methods of the above endpoints.

7.1.7 Safety Evaluation Method

1) Description of safety parameters

Safety Endpoints include:

1. Incidence of postoperative SSI, which is defined as follows according the standard of US Centers for Disease Prevention and Control [16]:

1) Superficial incisional SSI:

Involves skin or subcutaneous tissue, occurs within 30 days postoperatively, and must fulfill one of the following additional criteria:

- Purulent drainage from the superficial incision with or without diagnostic laboratory testing;
- Microorganisms isolated from aseptically obtained culture of fluid or tissue from the superficial incision;
- At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness or heat, and the superficial incision is deliberately opened by a surgeon (unless culture of incision is negative);
- Diagnosis of a superficial incisional SSI by a surgeon or attending physician.

Do not report the following conditions as SSI:

- Stitch abscess (minimal inflammation and discharge confined to the points of suture penetration);
- Infection of an episiotomy or newborn circumcision site;
- Infected burn wound;
- Incisional SSI that extends into the fascial and muscle layers (see deep incisional SSI).

Note: Specific criteria are used for identifying episiotomy and newborn circumcision sites and infected burn wounds.

2) Deep incisional SSI:

Infection occurs within 30 days after the operation if no implant is left in place or within 1 year if implant is in place and the infection appears to be related to the operation, infection involves deep soft tissues (e.g., fascial and muscle layers of the incision) and at least one of the followings:

- Purulent drainage from the deep incision but not from the organ/space component of the surgical site;
- A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (>38°C), localized pain, or tenderness, except that the incision is culture-negative;
- An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination;
- Diagnosis of a deep incisional SSI by a surgeon or attending physician.

Note:

- Report infection that involves both superficial and deep incision sites as deep incisional SSI;
- Report an organ/space SSI that drains through the incision as a deep incisional SSI.

3) Organ/space SSI:

Infection occurs within 30 days after the operation if no implant is left in place or within 1 year if implant is in place and the infection appears to be related to the operation, and infection

involves any part of the anatomy (e.g., organs or spaces), other than the incision, which was opened or manipulated during an operation, and at least one of the followings:

- Purulent drainage from a drain that is placed through a stab wound into the organ/space;
- Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space;
- An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination;
- Diagnosis of an organ/space SSI by a surgeon or attending physician.

It is unnecessary to conduct any confirmatory culture, unless the physician considers it necessary to provide subjects with appropriate treatment according to the local standard of care.

2. ASEPSIS score (only assessed in subjects with confirmed SSI):

The severity of incision infection is assessed by numeric scores (determining the presence or absence of SSI and types relative to CDC standard). The ASEPSIS incision score is used to evaluate the visual characteristics of incision and if additional treatment can be an incentive of infection or not when the subject leaves the hospital. The predictors include: serous discharge, erythema, purulent exudate, separation of deep tissues, antibiotics, drainage of pus, debridement of wound, isolation of bacteria, and requirement of inpatient care. Surgeons should assess each parameter and provide a numeric score based on the objective standard of incision appearance and the clinical outcome of infection. The following additional points are added: antibiotic treatment of SSI (10 points), drainage of pus under local anesthesia (5 points), debridement of wound under general anesthesia (10 points), isolation of bacteria from incision (10 points), and stay in hospital over 14 days (5 points). The total score, ranged from 0 to 100, is calculated to define the severity of incision according to the percentage of each characteristic's impact on incision [18,19]. Please refer to Annex 6.

3. Incidence of incisional wound separation or wound dehiscence requiring intervention;

4. Incidence of delayed incisional wound healing events;

5. Incidence of other adverse events;

6. Product complaints.

2) Selection of method and time to evaluate, record, and analyze the safety parameters

The safety parameters are recorded on the e-CRF according to the Investigator's record, medical record, and examination results, which are collected at each follow-up visit 2, 3, 4 and 5. See Section 8 for the Analysis Method of Safety Parameters.

7.2 Trial Flow Chart

7.2.1 Flow diagram of clinical trial

The schedule and events table of the trial is as follows:

Project	V1	V2	V3	V4	V5	Withdraw visit
Event/time point	Screening /baseline: within 14 days prior to surgery	Randomization: prior to surgery	Surgery	5-7 days after surgery	28-35 days after surgery	For subjects randomized but without any of study sutures used and for subjects who withdraw ICF[i]

Informed consent	X					
Demographic information	X					
Randomization		X				
Inclusion & Exclusion Criteria	X	X				
Fasting plasma glucose test [a]	X					
Blood/urine pregnancy test [b]	X					
Medical Record/ Surgical history [c]	X	X				
Physical examination	X					
Concomitant Medications [d]	X	X	X	X	X	
Surgical data [e]			X			
Concomitant treatment			X	X	X	
Imaging data of incision [f]				X	X	
Discharge date				X		
Wound healing grade assessment [g]				X		
Modified Hollander Wound Evaluation Scale [g]					X	
Postoperative incision pain score				X	X	
EQ-5D-5L	X			X	X	
SSI/ASEPSIS score				X	X	
Complications of incision [h]				X	X	
Adverse event		X	X	X	X	X
Product complaint			X	X	X	X
End of study					X	X

a. The result of the examination should be completed within 7 days prior to the signing of ICF.
b. Applicable to female subjects of childbearing age (less than 2 years post-menopausal). The result of the examination completed within 7 days prior to the signing of ICF is acceptable.
c. Disease newly diagnosed or existing within the period from 30 days prior to the signing of ICF to randomization are collected.
d. Concomitant medications used within the period from 7 days prior to the signing of ICF to the end of the study will be documented, excluding medications for surgical anesthesia.
e. The surgical data should include suturing time, length of operation, total operating room time, intraoperative suture performance indicators (collected data of the second case using [redacted] and [redacted] from each Investigator), and intraoperative use of suture devices.
f. At V4, a picture of complete neck anterior view containing full length of the incision should be collected; at V5, 5 pictures of incision should be collected [including a picture of complete neck anterior view containing full length of the incision, a picture taken parallel to the incision plane, a picture taken at a 45° angle to the incision plane, and incision lateral view pictures of both sides (one for each)] for assessment done by independent Central Imaging evaluators.
g. Assessed by Central Imaging evaluators using imaging data provided by study sites.
h. Including incisional wound separation or wound dehiscence requiring intervention, target incisional wound healing delay, etc.

i. For subjects who are randomized but without any of study sutures used for incision closure, this visit is conducted as early as possible. For subjects who withdraw ICF, this visit is conducted as early as possible with subjects' permission. Telephone visit is acceptable.

7.2.2 Specifications for Use of Devices

According to Instructions for Use (IFU) and technical manual of the product, the requirements for the use of study product are as follows:

1) **Indications/Scope of Application of Product**

Investigational products ([redacted] and [redacted]): indicated for use in soft tissue approximation where the use of absorbable sutures is appropriate

Control products:

[redacted]: It is indicated for use in soft tissue approximation, including use in pediatric cardiovascular tissue where growth is expected to occur and ophthalmic surgery (other than contact with cornea and sclera). [redacted] suture is not indicated in adult cardiovascular tissue, microsurgery and neural tissue. These sutures are particularly useful where the combination of an absorbable suture and extended wound support (up to six weeks) is desirable.

[redacted]: It is indicated for use in general soft tissue approximation and/or ligation, but not for use in cardiovascular or neurological tissues, microsurgery or ophthalmic surgery.

2) **Recommended Methods of Operation**

[redacted] device is designed to be used in continuous suture patterns. [redacted] device is intended to be used without anchoring knots to begin or terminate the device line.

Use as required per surgical procedure.

1. Secure the fixation loop portion to robust tissue by taking a bite in the designated tissue, passing the needle through the loop and pulling tautly around the anchoring tissue.

2. After [redacted] Device is anchored into the tissue, grasp the strand and approximate tissue to the desired tension. Bites, or passes through the tissue, can be taken in a continuous suturing technique to approximate the wound. Care should be taken to utilize the [redacted] Device on the barbed segments only. Do not attempt to approximate wounds using the non-barbed segment near the needle, as the barbs are required for successful wound approximation with the [redacted] Device

3. (1) To complete the closure in subcuticular closure, take at least one pass in the reverse direction. Then pass the needle across the incision and take a split thickness bite perpendicular to the incision and exit the skin.

(2) To complete the closure in all other tissue layers, take at least two passes in the reverse direction to complete the closure.

4. Then gently pull on the free end of the device and cut flush with the surface of the tissue.

To remove the entire [redacted] Device: Cut the [redacted] Device at the end anchored with the loop, and then pull the distal end to remove the device.

[redacted] device is designed to be used in continuous suture patterns. [redacted] Device is intended to be used without anchoring knots to begin or terminate the device line.

Use as required per surgical procedure.

1. Secure the fixation loop portion to robust tissue by taking a bite in the designated tissue, passing the needle through the loop and pulling tautly around the anchoring tissue.

2. After [redacted] Device is anchored into the tissue, grasp the strand and approximate tissue to the desired tension. Bites, or passes through the tissue, can be taken in a continuous suturing technique to approximate the wound. Care should be taken to utilize the [redacted] Device on the barbed segments only. Do not attempt to approximate wounds using the non-barbed segment near the needle, as the barbs are required for successful wound approximation with the [redacted] Device.

3. (1) To complete the closure in subcuticular closure, take at least one pass in the reverse direction. Then pass the needle across the incision and take a split thickness bite perpendicular to the incision and exit the skin.

(2) To complete the closure in all other tissue layers, take at least two passes in the reverse direction to complete the closure.

4. Then gently pull on the free end of the device and cut flush with the surface of the tissue.

To remove the entire [redacted] Device: Cut the [redacted] Device at the end anchored with the loop, and then pull the distal end to remove the device.

3) **Warning and Precautions**

[redacted]

- Warning

The fixation loop of the [redacted] Device should be deployed by users familiar with surgical procedures, techniques and tissues and the use of absorbable devices before employing the [redacted] Device for wound closure, as risk of wound separation may vary with the site of application and the suture material used. Surgeons should consider the quantity and quality of tissue in which the loop will be anchored. The use of this device may be inappropriate in highly vascularized tissue or fragile tissue that cannot withstand potential further tightening/constriction within the loop.

Surgeons should consider the *in vivo* performance when selecting a device for use in patients. The use of this device may be inappropriate in elderly, malnourished or debilitated patients, or in patients suffering from conditions which may delay wound healing.

As with any foreign matter, prolonged contact of any device with salt solutions, such as those found in the urinary or biliary tracts may result in calculus formation. As an absorbable device, [redacted] may act transiently as a foreign matter. Acceptable surgical practice should be followed for the management of contaminated or infected wounds.

As this is an absorbable device material, the use of supplemental nonabsorbable sutures should be considered by the surgeon in the closure of the sites which may undergo expansion, stretching or distention or which may require additional support.

The safety and efficacy of the [redacted] Device have not been established for use in fascial closures (including abdominal wall, thoracic and extremity fascial closures), gastrointestinal anastomoses, cardiovascular tissue, neural tissue, osseous tissue, tendinous tissue, ophthalmic surgery or for use in microsurgery.

Do not re-sterilize/reuse. Reuse of this device (or portions of this device) may create a risk of product degradation, which may result in device failure and/or contamination, which may lead to infection or transmission of blood-borne pathogens to patients and users. Discard open packages and unused devices. Discard packaging that is damaged or opened. Do not use after expiration date.

Precautions

The [redacted] Device contains a loop end and barbs to anchor tissues and does not require knots to secure the device. Tying of knots on the barbed section of the device will damage the

barbs and potentially reduce their efficacy. For the device to function properly, the [redacted] Device must first be anchored in robust tissue using the fixation loop. Then subsequently engage the barbs into the tissue in a standard closure pattern. When completing placement of the barbed segment in subcuticular tissue, take at least one additional pass in the reverse direction to lock the [redacted] Device in place. In all other tissue layers, take at least two passes in the reverse direction to lock the [redacted] Device in place.

Avoid contacting the [redacted] Device with other materials (e.g., surgical gauze, drapes, etc.) in the surgical field to prevent ensnaring on the barbs.

If the barbs catch, carefully pull the material in the opposite direction of the needle to disengage it from the barbs.

When using the [redacted] Device subcutaneously, the device should be placed as deeply as possible in order to minimize erythema and induration normally associated with absorption.

Care should be taken to avoid damage when handling the device. Avoid crushing or crimping the suture material with surgical instruments (e.g. needle holders or forceps). Do not attempt to remove memory in the polymer by running fingers down the suture material as this can damage the barbs.

Infections, erythema, foreign body reactions, transient inflammatory reactions and in rare instances wound separation are typical or foreseeable risks associated with any suture and hence are also potential complications associated with the [redacted] device.

Acceptable surgical practice should be followed with respect to drainage and closure of infected wounds. To avoid damaging needle points and swage areas, grasp the needle in an area one-third (1/3) to one-half (1/2) of the distance from the swaged end to the point. Reshaping needles may cause them to lose strength and be less resistant to bending and breaking. Users should exercise caution when handling surgical needles to avoid inadvertent needle sticks. Discard used needles in designated biohazard “sharps” containers.

Store at or below 30℃.

[redacted]

Warning

The fixation loop of the [redacted] Device should be deployed by users familiar with surgical procedures, techniques and tissues and the use of absorbable devices before employing the [redacted] Device for wound closure, as risk of wound separation may vary with the site of application and the suture material used. Surgeons should consider the quantity and quality of tissue in which the loop will be anchored. The use of this suture may be inappropriate in highly vascularized tissue or fragile tissue that cannot withstand potential further tightening/constriction within the loop.

Surgeons should consider the *in vivo* performance when selecting a device for use in patients. The use of this device may be inappropriate in elderly, malnourished or debilitated patients, or in patients suffering from conditions which may delay wound healing.

As with any foreign matter, prolonged contact of any device with salt solutions, such as those found in the urinary or biliary tracts may result in calculus formation. As an absorbable device, [redacted] Device may act transiently as a foreign matter. Acceptable surgical practice should be followed for the management of contaminated or infected wounds.

As this is an absorbable device material, the use of supplemental nonabsorbable sutures should be considered by the surgeon in the closure of the sites which may undergo expansion, stretching or distention or which may require additional support.

The safety and efficacy of the [redacted] Device have not been established for

use in fascial closures (including abdominal wall, thoracic and extremity fascial closures), gastrointestinal anastomoses, cardiovascular tissue, neural tissue, osseous tissue, tendinous tissue, ophthalmic surgery or for use in microsurgery.

Do not re-sterilize/reuse. Reuse of this device (or portions of this device) may create a risk of product degradation, which may result in device failure and/or contamination, which may lead to infection or transmission of blood-borne pathogens to patients and users. Discard open packages and unused devices. Discard packaging that is damaged or opened. Do not use after expiration date.

Precautions

The [redacted] Device contains a loop end and barbs to anchor tissues and does not require knots to secure the device. Tying of knots on the barbed section of the device will damage the barbs and potentially reduce their efficacy. For the device to function properly, the [redacted] Device must first be anchored in robust tissue using the fixation loop. Then subsequently engage the barbs into the tissue in a standard closure pattern. When completing placement of the barbed segment in subcuticular tissue, take at least one additional pass in the reverse direction to lock the [redacted] Device in place. In all other tissue layers, take at least two passes in the reverse direction to lock the [redacted] Device in place.

Avoid contacting the [redacted] Device with other materials (e.g., surgical gauze, drapes, etc.) in the surgical field to prevent ensnaring on the barbs. If the barbs catch, carefully pull the material in the opposite direction of the needle to disengage it from the barbs.

Skin devices that remain in place longer than 7 days may cause localized irritation and should be snipped off or removed if indicated. Subcuticular devices should be placed as deeply as possible to minimize the erythema and induration normally associated with absorption.

Under some circumstances, notably orthopedic procedures, immobilization of joints by external support may be employed at the discretion of the surgeon. Consideration should be taken in the use of absorbable devices in tissue with poor blood supply as device extrusion and delayed absorption may occur. In handling this or any other device material, care should be taken to avoid damage from handling.

Avoid crushing or crimping damage due to application of surgical instruments such as forceps or needle holders. Do not attempt to remove memory in the polymer by running fingers down the suture material as this can damage the barbs.

Infections, erythema, foreign body reactions, transient inflammatory reactions and in rare instances wound separation are typical or foreseeable risks associated with any suture and hence are also potential complications associated with the [redacted] device.

Acceptable surgical practice should be followed with respect to drainage and closure of infected wounds. To avoid damaging needle points and swage areas, grasp the needle in an area one-third (1/3) to one-half (1/2) of the distance from the swaged end to the point. Reshaping needles may cause them to lose strength and be less resistant to bending and breaking. Users should exercise caution when handling surgical needles to avoid inadvertent needle sticks. Discard used needles in designated biohazard “sharps” containers.

Store at or below 30℃.

7.2.3 Study Procedures

1) Visit 1 – Screening/ Baseline visit

The following screening procedures should be completed prior to any study procedure:

- The subject must be given enough time to review and sign the ICF;

- Collection of demographic information (e.g. date of birth, gender, ethnic origin, etc.);
- Review and collection of medical/surgical history;
- Urine/blood pregnancy test: The result of the examination completed within 7 days prior to the signing of ICF is acceptable. If multiple examinations are completed, the result of the examination closest to the time of operation shall prevail;
- Fasting plasma glucose test: The result of the examination completed within 7 days prior to the signing of ICF is acceptable. If multiple examinations are completed, the result of the examination closest to the time of operation shall prevail;
- Review/collection of inclusion/exclusion criteria, and determining whether the subject meets the criteria or not;
- Physical examination: Including body height, body weight, physical examination results of the head and neck, and other contents;
- Concomitant medications: Medications started within 7 days prior to the signing of ICF or currently used
- EQ-5D-5L。

a. Screening

Subjects will be consented prior to any study-specific screening procedures being conducted. Subjects will be considered enrolled into the study upon satisfaction of the following criteria:

- Completion of the informed consent process;
- It is determined by the investigator that the subject meets all inclusion criteria and does not meet any exclusion criteria (Section 7.1.5). The verification must be conducted by the Principal Investigator (PI) and/or authorized investigators prior to randomization.

b. Screen Failures

Subjects who signed the ICF and were screened but not successfully randomized will be considered screen failures. For subjects who are determined to be screen failures, only the following data will be collected:

- Informed consent date;
- Demographic information (age, race, gender, and ethnicity);
- Reason for screening failure.

2) Visit 2 -Randomization

The following information must be obtained during randomization:

- Confirmation of inclusion / exclusion criteria;
- Update of medical/surgical history (prior to randomization);
- Randomization: Central randomization prior to the surgical procedure;
- Concomitant medications;
- Adverse event (AE) (collected since randomization).

Randomization will occur if the patient meets all inclusion criteria and does not meet any exclusion criteria.

The central randomization system will be used in this study, so that subjects will not know their treatment group allocation. Each subject will be randomized to one of the three treatment groups according to the allocation ratio of 1:1:1, and the only difference between the investigational groups and control group lies in the suture material. Each group will include approximately 167 subjects.

3) Visit 3-Surgery

The following information must be obtained during the surgical procedure:

- Surgical data, including:

- Use: Including the code and quantity of study product used, and tissue layer at which the study product is used;
- Suturing time: It is defined as the time required from the first needle insertion for stitching ribbon muscles to the completion of intradermal suture (min);
- Length of operation: It is defined as the time from the incision of skin to the closure of skin (min);
- Total operating room time: It is defined as the time from the start of anesthesia on the subject to the time of leaving the operating room (min);
- Intraoperative suture performance indicators (using VAS scale, see Annex 4-2, collected data of the second case using [redacted] and [redacted] from each Investigator): Ease to pass through tissues, surgical operation profile (including surgical handfeel), suture memory, and wear resistance of suture;

- Concomitant medications: Excluded intraoperative medications for anesthesia;
- Concomitant treatment;
- AEs;
- Product complaints.

Surgical procedures

a. Open thyroid surgical procedure via the anterior cervical curved incision (Kocher's incision):

It is recommended that, the surgery, including the incision closure procedure be performed by not more than three groups of surgeons in each study site, to minimize bias and variation. Open thyroid surgery should be performed according to the diagnosis and treatment practice or specific guidelines of each institution. As required by the expert consensus, the method to make an anterior cervical curved incision (Kocher's incision): Make a collar-like, curved incision about 1-2 cm above the suprasternal notch along a pre-existing skin crease, and parallel to the skin crease. Pay attention to avoiding incision unparallel to local skin grease and subsequently formed a cross. After surgical healing, the incision should be hidden by skin crease of the neck and hence covert. It should be noted that, when making an anterior cervical transverse curved incision, the cervical incision should be made as symmetrical as possible according to the principles of human body aesthetics, to avoid deviation and inclination, disproportion or poor arc of the incision.

The postoperative drainage tube (if any) should be placed in another incision made, other than the incision above, and cannot be placed in full length of the incision.

b. Incision closure procedure using study products:

All the subjects must have their incision closed sutures according to the treatment group to which they are assigned. The specific suture materials and methods are as follows:

Investigational group 1: Use the study device [redacted]) for continuous suture of the ribbon muscles, [redacted]) for interrupted suture of the platysma, and [redacted]) for continuous subcuticular suture;

Investigational group 1			
Level	Suture Material	Suture Technique	Product Code
Ribbon muscles	[redacted]	**Continuous**	[redacted]
Platysma	[redacted]	Interrupted	[redacted]
Intradermal	[redacted]	Continuous	[redacted]

Investigational group 2: Use [redacted]) for continuous suture of the ribbon muscles, [redacted] for interrupted suture of the platysma, and the study device [redacted]) for continuous subcuticular suture;

Investigational group 2			
Level	Suture Material	Suture Technique	Product Code
Ribbon muscles	[redacted]	Continuous	[redacted]
Platysma	[redacted]	Interrupted	[redacted]
Intradermal	[redacted]	**Continuous**	[redacted]

Control group: Use the control device [redacted]) for continuous suture of the ribbon muscles, [redacted]) for interrupted suture of the platysma, and the control device [redacted]) continuous subcuticular suture.

Control group			
Level	Suture Material	Suture Technique	Product Code
Ribbon muscles	[redacted]	Continuous	[redacted]
Platysma	[redacted]	Interrupted	[redacted]
Intradermal	[redacted]	Continuous	[redacted]

None study product should be used once incision closure, despite of any reason leading to original sutures removal, incisions re-opening or re-suturing.

The method of use of the investigational devices is as follows:

1. Secure the fixation loop portion to robust tissue by taking a bite in the designated tissue, passing the needle through the loop and pulling tautly around the anchoring tissue.
2. After the device is anchored into the tissue, grasp the strand and approximate tissue to the desired tension. Bites, or passes through the tissue, can be taken in a continuous suturing technique to approximate the wound. Care should be taken to utilize the device on the barbed segments only. Do not attempt to approximate wounds using the non-barbed segment near the needle, as the barbs are required for successful wound approximation with the device.
3. (1) To complete the closure in subcuticular closure, take at least one pass in the reverse direction. Then pass the needle across the incision and take a split thickness bite perpendicular to the incision and exit the skin.
   (2) To complete the closure in all other tissue layers, take at least two passes in the reverse direction to complete the closure
4. Then gently pull on the free end of the device and cut flush with the surface of the tissue.

To remove the entire device: Cut the device at the end anchored with the loop, and then pull the distal end to remove the device.

Other sutures used in the trial should be used as per surgical procedure. Do not use skin adhesive at the incision site after the suture is done.

Postoperative care:

Postoperative care should be given according to the routine practice of the study site or the

specific requirements of postoperative care guidelines. The subjects' condition should be closely monitored until they are discharged.

4) Visit 4 – Day 5-7 post-surgery

The following information must be obtained at this visit:

- Concomitant medications;
- Concomitant treatment;
- Imaging data of incision: 1 picture of complete neck anterior view containing full length of the incision;
- Wound healing grade assessment: Assessed by Central Imaging evaluators according to the imaging data;
- Postoperative incision pain score;
- EQ-5D-5L;
- Incision SSI, and ASEPSIS score assessed in subjects with confirmed SSI;
- Wound complication assessment, including: incisional wound separation or incisional wound dehiscence requiring intervention, delayed incisional wound healing, etc.;
- Discharge date;
- AEs；
- Product complaints.

5) Visit 5 – Day 28-35 post-surgery

The following information must be obtained at this visit:

- Concomitant medications;
- Concomitant treatment;
- Imaging data of incision: Collect 5 pictures of incision (including a picture of complete neck anterior view containing full length of the incision, a picture taken parallel to the incision plane, a picture taken at a 45° angle to incision plane, and incision lateral view pictures of both sides (one for each);
- Modified Hollander Wound Evaluation Scale;
- Postoperative incision pain score;
- EQ-5D-5L;
- Incision SSI, and ASEPSIS score assessed in -subjects with confirmed SSI;
- Wound complication assessment, including: incisional wound separation or incisional wound dehiscence requiring intervention, delayed incisional wound healing, etc.;
- AEs;
- Product complaints.

6) Withdraw visit – For subjects randomized but without any of study sutures used and for subjects who withdraw ICF

For subjects who are randomized but without any of study sutures used for incision closure, this visit is conducted as early as possible. For subjects who withdraw ICF, this visit is conducted as early as possible with subjects' permission. Telephone visit is acceptable. The following information must be obtained at this visit: AEs; Product complaints.

7.3 Monitoring Plan

This study is performed according to the Good Clinical Practice for Medical Device Trials and related laws and regulations, such as ISO 14155, the Declaration of Helsinki.

The Sponsor takes the monitoring responsibility for the clinical trial and will select the qualified monitor to execute the monitoring responsibility.

The monitor should comply with the related laws and regulations and the standard operating procedure (SOP) established by the Sponsor to monitor each study phase.

The monitor should contact and visit the investigators at a regular basis and make the on-site visit/monitoring during the study. The monitor should visit each site right after the first subject is enrolled, and regular site visits during the duration of the study.

The monitoring will include visits to the clinical trial institution, verification of source data, communication with investigators and clinical trial institution, ensuring that this study will be performed strictly in compliance with the protocol and the requirements of regulations and Good Clinical Practice, etc.

The on-site monitoring includes verifying the source document and checking whether source data is true, accurate, complete and clear, the original document of each subject is complete.

This study might be audited by the Sponsor or inspected by Regulatory Authority. If such audit/inspection is performed, the Investigator and the site must agree the auditor to look up the records of subjects. The Investigator agrees the Sponsor or its appointed representative and Regulatory Authority to monitor all project-related study documents on site by signing on the signature page of this trial protocol.

See the Monitoring Plan for details.

8 Statistical Considerations

8.1 Statistical Design, Method and Analysis Procedure

This study is a multicenter, prospective, randomized controlled study to evaluate the of [redacted] and [redacted] used in thyroid surgery to suture surgical incision. Prior to surgery subjects will be randomized to the investigational group 1 [redacted]), investigational group 2 ([redacted]) or the control group according to the allocation ratio of 1:1:1. The primary **efficacy** endpoint is the proportion of subjects achieving Grade A wound healing (success) of surgical incision in each group. A blind assessment will be performed on the wound healing status by independent Central Imaging evaluators on Day 5-7 post-surgery using the imaging data (a picture of complete neck anterior view, covering full length of the incision).

This is a non-inferiority trial with two treatment group comparisons, investigational group 1 versus control group, and investigational group 2 versus control group. The overall family-wise error rate is controlled at 0.025 level using the Holm's multiple comparisons procedure. The expected success rate is 98% for all the three groups.

For each of the two comparisons, the statistical hypotheses for testing the non-inferiority of the investigational group to control is presented as follows:

- H_0: $P_T - P_C \leq -0.05$ tested against the alternative hypothesis
- H_a: $P_T - P_C > -0.05$

P_C is the proportion of successes (Grade A healing) in the control group and P_T is the proportion of successes in each of the investigational groups (1 and 2).

The proportion of subjects with Grade A healing will be summarized for each treatment group and will be calculated as the number of subjects with Grade A healing divided by the total number of subjects randomized to that treatment who had the surgical wound closed using the randomized suture. Within-treatment group, two-sided 95% confidence intervals for the proportions of successes will be provided using the Clopper-Pearson method.

For the primary endpoint analysis, the Holm's step-down procedure will be used. For each of

the two group comparisons, the p-value associated with the non-inferiority test will be calculated using the Normal approximation Z (pooled) statistic. If the smaller p-value is smaller than 0.0125, then the null hypothesis associated with this p-value will be rejected and it will be concluded that the associated Test product is non-inferior to Control; subsequently, the larger p-value will be compared to 0.025 in order to test the non-inferiority of the other Test product to Control. If the smaller p-value is larger than 0.0125, then neither of the null hypotheses can be rejected and it will be concluded that, for both investigational devices, the study failed to demonstrate non-inferiority to Control.

The primary endpoint will be analyzed using the Full Analysis Set (FAS) and Per-Protocol (PP) sets. The PP analysis will be considered the primary analysis, while the FAS analysis will be considered supportive. The analysis sets for this study are defined in section 8.8.

The following **secondary efficacy endpoints** will be summarized descriptively by treatment group for the FAS:

1. Incision suturing time, defined as the time required from the first needle insertion for stitching ribbon muscles to the completion of intradermal suture (min);
2. Modified Hollander Wound Evaluation Scale;
3. Postoperative incision pain score (VAS Scale);
4. Health related quality of life scale (EQ-5D-5L).

In addition, the following safety endpoints will be summarized descriptively t by treatment group for the Safety analysis set:

1. Incidence of postoperative SSI;
2. ASEPSIS score (only assessed in subjects with confirmed SSI);
3. Incidence of incisional wound separation or wound dehiscence requiring intervention;
4. Incidence of delayed incisional wound healing events;
5. Incidence of other AEs;
6. Product complaints.

The incidence of AEs will be assessed according to the classification of event and summarized descriptively by treatment groups. Incidence of AEs will also be assessed by onset time (intraoperative or postoperative), relationship to study surgical procedure, relationship to the study product, severity, and seriousness.

All continuous variables will be summarized by number of subjects, mean, standard deviation, median, minimum and maximum. All categorical data will be summarized by frequencies and associated percentages. No inferential statistics will be generated for secondary efficacy and safety endpoints.

8.2 Calculation of Sample Size

8.2.1 Total Sample size

This clinical study will enroll approximately 501 subjects, 167 for each treatment group.

One hundred fifty (150) evaluable subjects per study arm will achieve 80% power to detect a non-inferiority margin difference in group proportions of -0.05 for each of the two comparisons using a Pearson Chi-square test with a one-sided significance level of 0.0125. The proportion of successes in the Control group is assumed to be 0.98. The proportion of successes in Test group ([redacted] or [redacted]) is assumed to be 0.93 under the null hypothesis of inferiority. The power was computed for the case when the actual proportion of successes in the Test group is 0.98.

In order to account for a potential 10% dropout rate, approximately 167 subjects per arm will be enrolled, for a total of approximately 501 subjects.

8.2.2 Number of Subjects for Clinical Trial of Each Disease Entity and Reasons for

Determination

A total of approximately 501 Chinese subjects who undergo thyroid surgery will be included in the study. With consideration to the angle of incision, subjects with stage IV thyroid cancer and anaplastic thyroid cancer are excluded, but there are no restrictions on other disease.

8.2.3 Minimum and Maximum Number of Subjects in Each Clinical Trial Institution and Reasons for Determination

In China, total of approximately 501 subjects undergoing thyroid surgery in approximately 10 study sites will be enrolled into the study. Each site should enroll more than 125 subjects (25% of the total number).

During the implementation of the study, the Sponsor will try to ensure the consistency of number of subjects among sites in order to reduce the variation of the primary endpoint (and subject safety indicators) among sites.

8.3 Significance Level and Power of Clinical Trial

Determination of the sample size was performed assuming 80% power and a significance level of 0.0125 for each comparison. To control the overall Type I error rate at a 0.025 level for the two hypotheses being tested, Holm's stepdown multiple comparison procedure is being utilized.8.4 Expected Dropout Rate

The expected dropout rate in this study is 10%.

8.5 Criterion of Acceptability/Unacceptability of Clinical Trial Result

For the primary endpoint analysis, the Holm's step-down procedure will be used. For each of the two group comparisons, the p-value associated with the non-inferiority test will be calculated. If the smaller p-value is smaller than 0.0125, then the null hypothesis associated with this p-value will be rejected and it will be concluded that the associated Test product is non-inferior to Control; subsequently, the larger p-value will be compared to 0.025 in order to test the non-inferiority of the other Test product to Control. If the smaller p-value is larger than 0.0125, then neither of the null hypotheses can be rejected and it will be concluded that, for both test devices, the study failed to demonstrate non-inferiority to Control.

8.6 Criteria and Reason for Terminating the Trial Based on the Statistical Results

No interim analysis and corresponding early termination criteria, are planned for this trial; therefore this section does not apply. All the statistical analyses will be done after all the data are collected, and after study database lock. A Statistical Analysis Plan will be finalized prior to database lock and the performing of any final analyses.

8.7 Statistical Method of All Data, together with the Handling Method of Missing, Unused and Error Data (including Termination and Withdrawal Halfway) and Unreasonable Data

All study endpoints will be analyzed using the available data. There will be no missing data imputation in this study.

8.8 Selection Criteria and Reason of Subjects Included in the Analysis

All subjects that meet the inclusion/exclusion criteria are considered to meet the requirements for recruitment.

Three analysis sets in the study are defined for this study, as follows:

- FAS consists of all the enrolled subjects who were randomized and for whom the randomized suture materials were used for incision closure.
- PP (evaluable) Set contains all the subjects in the FAS who have no major protocol

deviation, have data available for primary efficacy endpoint and do not meet any of the following criteria:

- Subject undergoes any of the following procedures, in addition to thyroidectomy：

  1、 Any surgical procedure which require additional neck incisions or extend the original incision;

  2、 Cervical lymph node dissection (except the dissection of lymph nodes in the VI area);

  3、Other unplanned surgical procedures (except the procedure that the investigator doesn't think it will affect the original incision's healing)
- Subject's intraoperative frozen pathology or postoperative paraffin section pathology suggests anaplastic thyroid cancer;
- Subject receives any surgical procedures that lead to re-opening of the cervical incision during the period from the wound closure to the completion of study, except for surgeries related to surgical incision complication or study device.

- Safety Set contains all the enrolled subjects who receive surgery.

Major protocol deviations are deviations that have an impact on the primary endpoint assessment or randomization. These will be determined prior to database lock.

The analysis of primary efficacy endpoint will be performed using FAS and PP Sets. However, while the primary analysis is based on the PP Set, FAS analysis will only be used as supplemental analysis.

The secondary efficacy endpoints will be analyzed using the FAS, while the safety endpoints will be analyzed using the Safety Set.

8.9 Special Information Excluded during Hypothesis Testing and Justification (If Applicable)

Not applicable.

9. Data Management

Data management will be done by the Sponsor or the delegated Contract Research Organization (CRO) according to the SOP of data management. The data management process includes the establishment of capture/management system, design of CRF and database, data receiving and entry, data check and query, medical coding, external data management, Blind Review, Database Lock, data export and transmission, filing of data and data management documents, etc.

The data management plan should specify the database locking process, person in charge and SOP document executed. Unlocking and re-locking after database lock should be pre-defined with the conditions and processes specified. The data management plan should specify trial data to be archived, management file, media, and way and time limit of archiving.

10. Feasibility Analysis

10.1 Feasibility analysis of success

As stated above, the devices in the control group are surgical sutures that have been extensively applied in clinical practice, while the investigational products are suture devices that have brand new designs and have only been marketed in the US for one year; however, their main design elements, cutting knotless [1-5] and antimicrobial (triclosan)-coating [11,12] are mature and validated techniques. In the meantime, thyroid surgery incision is a clean incision, for which intradermic continuous suture is already a standard closure pattern. Therefore, it is likely to

achieve the noninferiority goal in the protocol and appropriate to expect success rates of 98% in all treatment groups.

In addition, according to the inclusion/exclusion criteria in the protocol, a large number of subjects can be included while the devices used in the study are supplied free of charge and hence will not increase the subjects' burden, making it less difficult to enroll and screen subjects.

To sum up, the likelihood of success in this study is relatively high.

10.2 Feasibility analysis of failure

As stated above, the investigational products are the combination of two mature techniques, but they have only been marketed in the US for one year and have not been reported in any related clinical literature yet. There may be some undiscovered problems that can cause some unforeseen problems in this study.

In addition, in this study, subjects are required to go back to hospital for follow-up visits 1-2 times at most after their surgery and discharged, which may make some subjects lost to follow-up. This may not be completely avoided under the condition that subjects are fully informed. According to the requirements of this study, lost-to-follow up and withdrawn subjects should be controlled within 10% of all the subjects.

To sum up, although the study may fail for some reasons, the overall likelihood is relatively small.

11. Quality Control of Clinical Trials

During the clinical study, the Sponsor and Investigator should execute their respective responsibilities according to the Good Clinical Practice for Medical Device Trials and applicable related Chinese and international regulations. They should also strictly follow the clinical trial protocol to ensure the quality of clinical trial.

The Sponsor will ensure proper training on the clinical trial protocol and the use and maintenance of investigational medical device for all investigators participating in the trial, to ensure the consistency in the implementation of clinical trial protocol, the use of investigational medical device.

During the implementation of study, the Sponsor is responsible for monitoring each phase of the clinical trial. The clinical monitor employed by the Sponsor or appointed representative should comply with the related standard operating procedure (SOP) and clinical trial protocol that are established by the Sponsor to monitor the clinical trial, to ensure the complete, accurate, true and reliable data.

To ensure the quality of study, the Sponsor may authorize the eligible auditor to audit the clinical trial, as needed. The Investigator should allow the auditors to review the original data and documents related to this study after receiving the notification.

When the Food and Drug Administration, Health Planning Department or other regulatory agencies send the inspection personnel to carry out the inspection, the clinical trial institution and Investigator should cooperate and immediately notify the Sponsor.

12. Clinical Trial-Involved Ethical Issues and Informed Consent

12.1 Ethical Concerns

Ethical issues involved in this study have been stipulated according to China's laws and regulations and international consensus such as the Declaration of Helsinki, the protocol design has taken ethical principles into full consideration, and the rights, safety and health of trial subjects are the most important concerns. The specific contents should at least include:

1) Regulations to make sure subjects are fully informed

2) Regulations that respect and protect subjects' privacy, and that keep records possibly identifying subjects confidential

3) The production of investigational product should meet the relevant requirements of applicable quality management system for medical devices; the processing and storage of investigational product should meet the requirements of IFU and SOP. The investigational product should be used according to the approved protocol and related operation instructions. The reference product should be used to ensure the safety of subjects to the maximum extent.

4) Qualified clinical study sites and investigators should be selected, and investigators should make medical decisions that are in the best interest of subjects

5) In the inclusion/exclusion criteria of the study, inclusion criteria for subjects of different groups should be identical; subjects who withdraw from the study will not affect the treatment of disease; Subjects who suffer from study-related injury will be given appropriate treatment and compensation (see ICF)

6) Before any subject is recruited, the study protocol and its amendments, ICF and other study-related documents applicable must be submitted to the corresponding EC for review and must obtain written comments from the EC.

12.2 Approval of Trial Protocol

The trial protocol should be internally approved and filed according to the company's SOP prior to submitting to the external agency (including but not limited to the government regulatory agencies, Ethics Committee).

The clinical trial protocol should not be implemented until the written approval is obtained from the Ethics Committee according to the relevant requirements of laws and regulations.

12.3 Process of Informed Consent and Text of Informed Consent Form

12.3.1 Process of informed consent

The informed consent of all subjects participating in the study must be obtained prior to performing any study tests/procedures. The Investigator must explain the background of the study presented and the benefits and risks of surgery and study to the subjects before the subject participates in the study. Only the subject who signs the latest informed consent form that is approved by the EC prior to participating in the study is eligible to participate in this study. Subject who has not signed the written ICF is not eligible to participate in this study.

Each subject (or legally authorized representative) must sign and date the latest informed consent form that is approved by the EC prior to implementing any study-related items or operations not belonging to the standard treatment and after the nature of this study is fully clarified.

The process of obtaining the written informed consent needs to prove that the subjects volunteer to participate in this study. All aspects of this study must be clarified to the subjects prior to signing the informed consent form, and questions raised by the subject must be clearly answered. The Investigator and/or designee must clearly document the process of obtaining informed consent in the subject clinical record. The investigator has responsibilities to ensure the process of obtaining the informed consent is implemented according to the Good Clinical Practice for Medical Device Trials and related regulations, such as ISO 14155, the Declaration of Helsinki.

12.3.2 Text of Informed Consent Form

See ICF.

13. Device Management

In this study, the Sponsor will prove all the study products and control products. The packages of the products should be clearly specified with “For Clinical Trial Only”.

13.1 Accountability of investigational devices

All the study involved devices received must be counted, of which the quantity should be checked continuously throughout the study: the investigator and/trained designated person should record the receipt, use, dispensing and return of devices during the study properly. These investigational devices must be kept in a secure location with restricted access and stored according to the conditions outlined in the IFU. In all circumstances, the investigational device is intended for use by the investigator or sub-investigator for subjects consented for participation in this clinical study only.

An accountability log will be used by each site to acknowledge receipt of all investigational devices and to record the disposition of all investigational devices on an ongoing basis throughout the course of the study. The process of device accountability and checking should be thoroughly explained during the study site initiation period. The responsible monitor will review the investigational device accountability at each monitoring visit.

In addition, the following but not limited paper study documents must be maintained as well:

- Each subject’s product accountability tables of implanted device (this may include the original document and/or packaging label of the investigational/control product used);
- All forms documenting the investigational devices return process;
- All forms related to transport and receipt of investigational devices.

13.2 Return of investigational devices

All unopened and unused (e.g., expired), opened and unused, damaged, mislabeled or malfunctioning investigational devices must be returned to the Sponsor with related form. During the study site initiation visit, the Sponsor should train the investigator thoroughly.

14. Regulations of Adverse Event and Device Complaint Reporting

14.1 Adverse Event

AE is an untoward medical occurrence during the clinical study and which does not necessarily have a causal relationship with the study medical device.

Ever since the randomization of subjects, the investigator must confirm if any AE occurs, and if any, determine the relationship between AE and investigational device or surgical procedure, when evaluating subjects enrolled by clinical study each time.

Postoperative fever, postoperative pain, incisional scar formation and laboratory abnormalities are expected to occur after surgery and will not be recorded as AE in this study, unless the investigator believes the degree of pain or fever exceeds the subject’s normal expected range after surgery or related to study devices.

Other AEs, investigational device failure and other product problems must record in the medical record and entered the e-CRF.

The severity of AE will be separated into the following grades:

Mild: Awareness of sign or symptom that does not interfere with the subject's usual activity or is transient, resolved without treatment and with no sequelae,

Moderate: Interferes, but does not hinder, the subject's usual activity and may require treatment;

Severe: Causes severe discomforts, results in major impact on the subject's activities of daily living and requires treatment or intervention.

The causal relationship should be assessed as follows:

Unrelated	There is no correlation between the AE and the use of medical device
Possibly unrelated	The occurrence of AE is more likely to be associated with other factors, e.g.: concomitant medication or concomitant disease, or the occurrence time of the event does not suggest a causal relationship with the use of study-related device.
Possible:	The occurrence of AE may be caused by study-related device. Other factors may have contributed to the event, e.g.: concomitant medication or concomitant disease. The event occurs within a reasonable time after the use of study-related device and the causal relationship between the event and the use of study-related device cannot be ruled out.
Probable	The occurrence of AE is probably caused by the use of study-related device. The event occurs within a reasonable time after the use of study-related device, e.g.: it is confirmed after the medical device is taken out. It is unlikely to have another explanation for the event (e.g. concomitant medication or concomitant disease).
Definitely Related:	The occurrence of AE has been confirmed as a definite side effect of the medical device and cannot be explained by other reasons (e.g. concomitant medication and concomitant disease). The occurrence time of the event highly suggest a causal relationship (e.g. reaction after removal of medical device and replantation of medical device).

14.2 Serious Adverse Event

SAE refers to any untoward medical occurrence in a clinical trial that results in death or serious deterioration of health status, including life-threatening conditions or damage, permanent defect of body structure or body function, events requiring inpatient hospitalization or prolongation of existing hospitalization, those requiring medical or surgical intervention to avoid permanent defect of body structure or body function; and those resulting in fetal distress, fetal death or congenital anomaly/birth defect, etc.

A planned hospitalization and/or medical intervention for pre-existing conditions, or a procedure required by the protocol, without serious deterioration in health, is not considered to be a serious adverse event.

14.3 Device Complaints

A product complaint is defined as any written, electronic or oral communication that alleges deficiencies related to the identity, labelling, quality, durability, reliability, safety, efficacy, or performance of a device after it is released for distribution. In the event of any device complaint, the study site must inform the monitor and track and report it according to the process stipulated by the Sponsor. The study site must inform the study monitor of all device complaints of the study groups and control group. The monitor will track and report device complaints according to the method and time limit stipulated by the Sponsor and China's laws and regulations and return related products to the quality department of J[redacted] upon the request of the Sponsor.

14.4 Device Defects

Device defects refer to unreasonable risks of medical device existing during the clinical trial

under normal use, which may endanger human health and life safety, such as labeling error, quality problem, malfunctioning, etc.

In the event of any device defect that may lead to SAE, the Sponsor should report it to the Food and Drug Administration Department and Health Planning Department at the same level within 5 working days after the awareness of the defect. The Sponsor will notify other clinical trial institutions and investigators participating in the trial and notify the EC of the clinical trial institution involved in a timely manner via its medical device clinical trial management department. The investigator should record all AEs occurring and device deficiencies found in the process of clinical trial, work with the Sponsor to analyze the causes of the events, generate the written analysis report, present the comments on the continuation, discontinuation or termination of the trial, and report to the Ethics Committee by the administrative department for clinical trial of medical device of clinical trial institution for review.

14.5 Reporting Procedure and Contact Person Information

The investigator should ensure sufficient treatment is given for any AE experienced by a subject, including clinically significant laboratory test values related to this study.

Once a subject is randomized, his/her AE should be followed up, until they are resolved or stabilized and the clinical outcome has been determined, or until his/her last follow-up visit (the earliest one shall prevail). If the investigator considers the AE is related to the study product, the subject must be followed up until the event is resolved and stabilized.

The investigator must report the AE to the Sponsor via e-CRF within 2 weeks after its awareness. The Investigator should record the nature, severity, treatment and outcome of AE and determine whether the AE is related to the study device, medication, or surgical procedure defined in the study protocol or not.

All the SAEs must be followed up until they are resolved (with or without sequela). When the event is not resolved or stable at the end of study, the medical monitor in this clinical study will decide whether it is necessary to collect the further follow-up information. The Investigator should send a report to regulatory agencies at different levels, EC and the Sponsor within 24 hours after the awareness of a SAE.

The Investigator must report any SAEs and any device defects possibly leading to SAE that occur during the study to the Sponsor and related regulatory department required by laws and regulation within 24 hours after the awareness of the event or defect; and provide further information upon the sponsor’s request.

For any SAE and device defect that may lead to SAE, the Investigator should report it to the regulatory authorities, EC and the Sponsor within the time limit defined by the Sponsor. According to the requirements of No.25 Decree, the Sponsor should report the SAE or defect to the Food and Drug Administration Department and Competent Department of Health and Family Planning at the same level within 5 working days after its awareness. – The Sponsor will notify other clinical trial institutions and investigators participating in the trial and notify the EC of the clinical trial institution involved in a timely manner via its medical device clinical trial management department.

The investigator should record all AEs occurring and device deficiencies found in the process of clinical trial, work with the Sponsor to analyze the causes of the events, generate the written analysis report, present the comments on the continuation, discontinuation or termination of the trial, and report to the Ethics Committee by the administrative department for clinical trial of medical device of clinical trial institution for review. Once a device complaint is found, the site should inform the Sponsor as soon as possible, and report the device related information on the relevant CRF.

In the event of a device failure, the study site must notify the clinical monitor as soon as possible.

The monitor should coordinate related departments and return the product to the quality department of [redacted] according to the Sponsor's schedule.

The contact persons for AE and device defect reporting are as follows:

AE: [redacted].com [redacted].com
Device Complaints: [redacted].com

15. Deviation From Clinical Trial Protocol And Regulations For Clinical Trial Protocol Amendment

The study protocol deviations are defined as the circumstances that fail to comply with the requirements of clinical trial protocol intentionally or unintentionally.

All protocol deviations should be reported as protocol deviations to the Sponsor via protocol deviation form and monitoring visit report. The reporting should include the date and reason for protocol deviations. The Investigator should also report the protocol deviations to hospital's medical device clinical trial management department, and report to EC via them, in accordance with the procedures and regulations and the requirements of the hospital.

If a protocol amendment occurs, the Sponsor or designated person should submit a summary of changes of the study protocol to the Investigator, regulatory authority, and the Ethics Committee, etc. according to the relevant laws and regulations. All major amendments must be approved by the Ethics Committee and regulatory authority (if needed) prior to implementing any changes to study procedures.

An amendment is regarded substantial when they are likely to have a significant impact on:

- The safety or physical or mental integrity of the subjects;
- Scientific value of trial;
- Conduct or management of the trial;
- Quality or safety of investigational medical device specified in the trial.

16. Direct Access to Source Data and Document

The source data is defined as all information in the subject's original medical record and its approved copy regarding the clinical findings, observations and other activities in the clinical trial, which can be used for reproduction and evaluation of clinical trial. The source documents are documents on which the source data is recorded, including printed, paper or electronic documents.

The subject's medical record and other study related documents (source documents) must be maintained and retained by the Investigator. The Investigator should allow the monitors and auditors/inspectors to review all relevant subject records, including but not limited to the following information:

- Medical/physical condition of the study subject that meets the inclusion criteria prior to participating this study;
- Medical record documenting the informed consent process;
- Operational description of use and implantation of the study product;
- All inspection results and follow-up;
- Examined printed output file or report (for example, X-ray film) that is dated and signed;
- Imaging or video data of wound healing status;
- Description of AE and follow-up of AE (description of event, severity, date of occurrence, duration, correlation with the study device, study procedure, outcome, and treatment of the AE, concomitant medications when the AE occurs);

- Description of product complaint;
- Study subject's status at the end of the study or withdrawn from the study.

Subject's medical documents including the medical record, examination reports, films, imaging records, etc. The Sponsor expects that, appropriate study coordinator and/or investigator, appropriate original source documents and an appropriate environment will be available during the monitoring visit for review of study-related documents. All the inconsistencies between the e-CRF and source documents must be marked and resolved via discussion with the investigator or designated person.

17. Finances and Insurance

See relevant study contract and insurance document.

18. Contents Should Be Covered by Clinical Study Report

According to regulatory requirements, the clinical study report will contain the following contents:

The clinical trial report should be consistent with the clinical trial protocol, mainly containing:

(1) General information;
(2) Synopsis;
(3) Introduction;
(4) Objective of clinical trial;
(5) Method of clinical trial;
(6) Contents of clinical trial;
(7) General clinical information;
(8) Investigational medical devices and control medical devices or control diagnosis and treatment method;
(9) Statistical analysis method(s) and evaluation method(s) adopted;
(10) Clinical evaluation criteria;
(11) Organizational structure of clinical trial;
(12) Description of ethics profile;
(13) Clinical trial results;
(14) Adverse events found during the clinical trial and corresponding treatment;
(15) Analysis and discussion of clinical trial results, especially indications, scope of application, contraindications and precautions;
(16) Clinical trial conclusion;
(17) Existing problems and suggestions for improvement;
(18) List of study personnel;
(19) Other situations requiring explanation;
(20) Clinical trial summary of each study site.

19. Confidentiality Principle

The personal data of the subject participating in the trial is confidential; however, the EC, CFDA, Competent Department of Health and Family Planning, or the Sponsor and its authorized representative may review the personal data of the subject participating in the trial for the purpose of their work according to the local established procedure.

Subject confidentiality will be maintained throughout the clinical study in a way that ensures the information can always be tracked back to the source data. For this purpose, a unique subject identification code (site number and subject number) will be used that allows identification of all data reported for each subject. As long as the data is kept strictly confidential and that the privacy of the subject is ensured to be protected, the data related to this study may be available

to third parties (for example, under the audit of regulatory authority).

20. Agreement on the Publication of Trial Results

At the conclusion of the study, a multicenter manuscript will be prepared for publication in a reputable scientific journal. The publication of the principal results from any single-site experience within the study is not allowed until the preparation and publication of the multi-center results. Exceptions to this rule require the prior approval of the Sponsor. The analysis of other pre-specified and non-pre-specified endpoints will be performed by Data Management. Such secondary analyses, as well as other proposed investigations, will require the approval of the Sponsor. For purposes of timely abstract presentation and publication, secondary publications will be delegated to the appropriate principal authors, and final analyses and manuscript review for all multi-center data will require the approval of the Sponsor.

21. Responsibilities That Each Party Should Bear

21.1 Sponsor Responsibility

1) The Sponsor is responsible for the initiation, application, organization and monitoring of clinical trial.
2) The Sponsor is responsible for the organization to establish and modify the investigator brochure, clinical trial protocol, informed consent form, Case Report Form, relevant standard operating procedure and other relevant documents, carry out the training required for the clinical trial, and provide these documents to the investigators before the study starts.
3) The Sponsor should select the qualified trial institution and investigators.
4) The Sponsor should sign a written agreement with the clinical trial institution and the Investigator regarding the clinical trial.
5) The Sponsor should provide qualified study product according to the regulatory requirements. The Sponsor should be responsible for the safety of investigational medical product in the clinical trial. The AE, SAE, and the product complaint that may cause an SAE should be collected and reported in accordance with the provisions.
6) The Sponsor should inform the regulatory authority at every level when the Sponsor decides to suspend or terminate the clinical trial or at the end of the study.
7) The Sponsor should ensure the Investigator conducts the study strictly in compliance with the clinical trial protocol, corrects the protocol deviations in a timely way, and reserves the rights to report, to the regulatory authority, any of issues related to this.
8) The Sponsor should bear the treatment cost and relevant economic compensation for the clinical trial-related injury or death of subjects, with the exception of damages due to the fault of medical institution and medical staff in the diagnosis and treatment.
9) The Sponsor should select qualified monitors for monitoring and organizing any inspections, as appropriate.

21.2 Responsibilities of Clinical Trial Institution and Investigator

1) The clinical trial institution should evaluate the relevant resources according to the features of investigational medical product prior to the clinical trial, so as to decide whether to participate in this clinical trial.
2) The clinical trial institution should properly keep the records and essential documents of clinical trial according to the agreement with the Sponsor.
3) Ensure the Investigators who are responsible for the clinical trial have the qualification in accordance with the requirements of related laws and regulations.
4) The administrative department for clinical trial of medical product of clinical trial institution should cooperate with the Sponsor to apply to the Ethics Committee and submit the relevant documents prior to the clinical trial according to requirements.

5) The investigator should ensure that the relevant workers participating in the trial have the enough resources and proper training, and keep the training related documents.
6) The Investigator should ensure to use the investigational medical product only for the subjects of this clinical trial, and may not charge any fee.
7) The Investigator should strictly follow the clinical trial protocol, with the exception of emergency circumstances when the subject faces the direct risk and needs immediate clinical measures, which can be reported later in a written form.
8) The Investigator is responsible for recruiting the subjects, communicating with the subject or its legal representative before signing the informed consent.
9) The Investigator should protect the rights, safety and health of the subjects.
10) In case of a SAE occurring in the clinical trial, the Investigator should protect the safety of the subjects and timely report the event to the regulatory authority.
11) The investigator should record all AEs occurring and device deficiencies found in the process of clinical trial, work with the Sponsor to analyze the causes of the events, generate the written analysis report, present the comments on the continuation, discontinuation or termination of the trial, and report to the Ethics Committee by the administrative department for clinical trial of medical device of clinical trial institution for review.
12) The Investigator should ensure that the clinical trial data is accurately, completely, clearly and timely recorded in the Case Report Form.
13) The clinical trial institution and investigator should make sure that the data, documents and records generated in the clinical trial are timely, true, accurate, clear, and attributable.
14) The clinical trial institution and Investigator should accept and cooperate with the monitoring and audit of the Sponsor, the supervision of the Ethics Committee, and the inspection of the Food and Drug Administration, competent department of health and family planning, etc., and provide all required records related to the trial.
15) If the clinical trial needs to be suspended or terminated, the subjects should be informed accordingly, and it should be ensured that the subjects receive the proper care and follow-up. The clinical trial institution and Investigator should also report this in accordance with the regulations and provide a detailed written explanation. The relevant report should be submitted to the local Food and Drug Administration at the provincial, autonomous regional and municipal level, if necessary.
16) The clinical trial institution and investigator reserve the rights to report to the regulatory authority at every level when the Sponsor violates relevant laws and regulations.
17) The Investigator should complete all records and reports at the end of clinical trial. The Investigator should also ensure that the received investigational medical products are properly handled and recorded according to the requirements.

21.3 Responsibilities of other interested parties

See the study related contract.

Statement of Investigator

I agree to:

1. Conduct this clinical trial in strict accordance with the requirements of the Declaration of Helsinki, China's current laws and regulations and trial protocol.

2. Record all required data correctly in the study EDC database and input, review, and approve the clinical trial report on schedule.

3. Use the investigational medical device only for this clinical trial, accurately and completely record the investigational medical device receipt and use condition during the clinical trial, and keep these records.

4. Allow the monitor and inspectors authorized and dispatched by the Sponsor and regulatory authority to monitor, inspect and audit this clinical trial.

5. Strictly implement the terms in the clinical trial contract/protocol signed by all parties.

I have read thoroughly the clinical trial protocol, including the above statements, and I agree to all the above contents.

Comments of Sponsor Signature (Stamp) Year Month Day

Comments of Investigator Signature Year Month Day

Comments of clinical trial institution of medical device Signature (Stamp) Year Month Day

Annex 1: References

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1980502

Annex 2: List of Specifications and Models

[Investigational Product]:

【[redacted]】

Unidirectional barbed model
SXPP1B201
SXPP1B203
SXPP1B204
SXPP1B205
SXPP1B429
SXPP1B430
SXPP1B431
SXPP1B401
SXPP1B402
SXPP1B403
SXPP1B404
SXPP1B405
SXPP1B406

SXPP1B450
SXPP1B407
SXPP1B408
SXPP1B202
SXPP1B451
SXPP1B452
SXPP1B409
SXPP1B410
SXPP1B411
SXPP1B412
SXPP1B413
SXPP1B414
SXPP1B101
SXPP1B102
SXPP1B415

SXPP1B416
SXPP1B417
SXPP1B418
SXPP1B419
SXPP1B103
SXPP1B104
SXPP1B105
SXPP1B106
SXPP1B420
SXPP1B421
SXPP1B107
SXPP1B108
SXPP1B109
SXPP1B110
SXPP1B422

SXPP1B423
SXPP1B424
SXPP1B425
SXPP1B111
SXPP1B112
SXPP1B113
SXPP1B114
SXPP1B115
SXPP1B116
SXPP1B117
SXPP1B118
SXPP1B119
SXPP1B120
SXPP1B426
SXPP1B427

SXPP1B428
SXPP1B432
SXPP1B433
SXPP1B434
SXPP1B453
SXPP1B454
SXPP1B455
SXPP1B456
SXPP1B457
SXPP1B458

Bidirectional barbed model
SXPP2B422
SXPP2B423
SXPP2B417
SXPP2B419
SXPP2B418
SXPP2B420
SXPP2B415

SXPP2B416
SXPP2B200
SXPP2B201
SXPP2B202
SXPP2B203
SXPP2B426
SXPP2B425
SXPP2B424
SXPP2B404

SXPP2B413
SXPP2B414
SXPP2B440
SXPP2B441
SXPP2B442
SXPP2B443
SXPP2B406
SXPP2B407
SXPP2B408

SXPP2B412
SXPP2B409
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SXPP2B429
SXPP2B430
SXPP2B431

SXPP2B432
SXPP2B433
SXPP2B401
SXPP2B402
SXPP2B403
SXPP2B434
SXPP2B400
SXPP2B405
SXPP2B435

【[redacted]】

Unidirectional barbed model
SXMP1B408
SXMP1B409
SXMP1B410
SXMP1B411
SXMP1B412
SXMP1B413
SXMP1B414
SXMP1B415

SXMP1B416
SXMP1B417
SXMP1B419
SXMP1B420
SXMP1B421
SXMP1B424
SXMP1B425
SXMP1B426
SXMP1B427
SXMP1B428

SXMP1B429
SXMP1B101
SXMP1B102
SXMP1B103
SXMP1B104
SXMP1B105
SXMP1B106
SXMP1B107
SXMP1B108
SXMP1B109

SXMP1B110
SXMP1B111
SXMP1B113
SXMP1B430
SXMP1B431
SXMP1B432
SXMP1B433
SXMP1B434
SXMP1B435
SXMP1B436

SXMP1B114
SXMP1B115
SXMP1B116
SXMP1B117
SXMP1B118
SXMP1B119
SXMP1B120
SXMP1B437
SXMP1B438
SXMP1B439

Bidirectional barbed model
SXMP2B405
SXMP2B407
SXMP2B409
SXMP2B151
SXMP2B404
SXMP2B406
SXMP2B408
SXMP2B152
SXMP2B150
SXMP2B410
SXMP2B424
SXMP2B425
SXMP2B426
SXMP2B413
SXMP2B411
SXMP2B412
SXMP2B414
SXMP2B403
SXMP2B402
SXMP2B415
SXMP2B416
SXMP2B417
SXMP2B418
SXMP2B419
SXMP2B420
SXMP2B400
SXMP2B401
SXMP2B421
SXMP2B422
SXMP2B423

[Control Product]:

【[redacted]】：[redacted]

【[redacted]】：[redacted]

【[redacted]】：[redacted]

Annex 3: Modified Hollander Wound Evaluation Scale

Modified Hollander Cosmesis Score

Parameter	Definition	Assessment	Yes	No
Step off borders	Edges not on same plane	As you run finger over the healed wound, is there a step or the edges?	1	0
Contour irregularities	Wrinkled skin near wound	Is the skin near the wound wrinkled or puckered?	1	0
Incision margin separation	Gap between sides	Is the gap between the wound edges at the widest point (i.e., scar width) >2 mm?	1	0
Edge inversion	Wound not properly everted	Either of the wound edges invert (sink or cut) into the wound?	1	0
Excessive inflammation	Redness, swelling/oedema discharge from wound	Is there evidence of swelling, redness or discharge from the wound?	1	0
Overall Appearance			Poor=1	Good=0

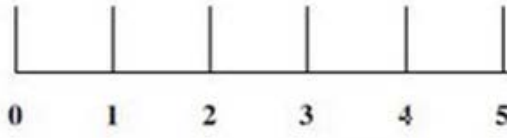
Annex 4: Vas Scale

1. Postoperative Incisional Pain

Score 0 means no pain;
Score 10 means unbearable: severely affects sleep with other symptoms, or passive position;

2. Intraoperative suture performance indicators

   Survey to be completed for the second case using [redacted] and [redacted] for each Investigator.



- Ease to pass through tissues

Score 0 means very easy to pass through tissues;
Score 5 means very difficult to pass through tissues;

- Surgical operation profile (including surgical “handfeel”)

Score 0 means the best “handfeel”;
Score 5 means the worst “handfeel”;

- Suture memory

Score 0 means no suture memory;
Score 5 means the suture memory is very serious;

- Wear resistance of suture

Score 0 means the wear resistance is very good;
Score 5 means the wear resistance is very bed.

Health Questionnaire

Simplified Chinese Version for China

(Simplified Chinese version for China)

Under each heading, please tick the ONE box that best describes your health today

MOBILITY

I have no problems in walking about □

I have slight problems in walking about □

I have moderate problems in walking about □

I have severe problems in walking about □

I am unable to walk about □

SELF-CARE

I have no problems washing or dressing myself □

I have slight problems washing or dressing myself □

I have moderate problems washing or dressing myself □

I have severe problems washing or dressing myself □

I am unable to wash or dress myself □

USUAL ACTIVITIES *(e.g. work, study, housework, family or leisure activities)*

I have no problems doing my usual activities □

I have slight problems doing my usual activities □

I have moderate problems doing my usual activities □

I have severe problems doing my usual activities □

I am unable to do my usual activities □

PAIN/DISCOMFORT

I have no pain or discomfort □

I have slight pain or discomfort □

I have moderate pain or discomfort □

I have severe pain or discomfort □

I have extreme pain or discomfort □

ANXIETY/DEPRESSION

I am not anxious or depressed □

I am slightly anxious or depressed □

I am moderately anxious or depressed □

I am severely anxious or depressed □

I am extremely anxious or depressed □

• We would like to know how good or bad your health is TODAY.

• This scale is numbered from 0 to 100.

• 100 means the best health you can imagine.

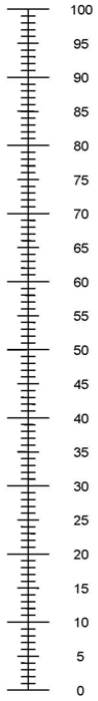
0 means the worst health you can imagine.

• Mark an X on the scale to indicate how your health is TODAY.

• Now, please write the number you marked on the scale in the box below.

YOUR HEALTH TODAY = ☐

The best health you can imagine



The worst health you can imagine

Annex 6: Asepsis Score (Example)

Incision Characteristics	Proportion of Wound Affected					
	0	<20	20-39	40-59	60-79	>80
Serous exudate	0	1	2	3	4	5
Erythema	0	1	2	3	4	5
Purulent exudate	0	2	4	6	8	10
Separation of deep tissues	0	2	4	6	8	10
Points are scored for daily wound inspection.						

Additional Treatment	Points
Antibiotics	10
Drainage of pus under local anesthesia	5
Debridement of wound (general anesthesia)	10
Serous discharge*	Daily 0-5
Erythema*	Daily 0-5
Purulent exudate*	Daily 0-10
Separation of deep issues*	Daily 0-10
Isolation of bacteria	10
Stay as inpatient prolonged over 14 days	5
* Given score only on five of seven days. Highest weekly score used.	

Category of Infection	
Total Score**	**Definition**
0-10	Satisfactory healing
11-20	Disturbance of healing
21-30	Minor wound infection
31-40	Moderate wound infection
>40	Severe wound infection
** When calculating the total score, scores of independent incision characteristics and additional treatments should be added.	