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510(k) Summary of Safety & Effectiveness

This 510(k) Summary of Safety and Effectiveness for the EBI SpineLink™ System is provided as required per Section 513(l)(3) of the Food, Drug and Cosmetic Act.

1. **Submitter:** Electro-Biology, Inc.
6 Upper Pond Road
Parsippany, NJ 07054
- Contact Person:** Jon Caparotta
Telephone: (973) 299-9022

Date prepared: August 14, 1998

2. **Proprietary Name:** EBI SpineLink™ System
- Common Name:** Spinal Fixation Device
- Classification Names:** Spondylolisthesis Spinal Fixation Device System
Spinal Intervertebral Body Fixation Orthosis
Spinal Interlaminar Fixation Orthosis

3. **Predicate or legally marketed devices that are substantially equivalent:**

- EBI SpineLink™ System
- Isola® Spine System - AcroMed Corporation
- TSRH® Spinal System - Sofamor Danek

4. **Description of the device:** The EBI SpineLink™ System is a spinal fixation device that uses interconnecting links. This submission is for the addition of an 8.5 mm screw, 18 mm link (standard and reverse) and availability of screws in 25 and 30 mm lengths.

5. **Intended Use:** The EBI SpineLink™ System has not changed the Indications for Use or fundamental scientific technology of the previously cleared EBI SpineLink™ System (K964797 and K971970). The EBI SpineLink™ System is a spinal fixation device for pedicle screw fixation and nonpedicle hook and sacral/ilic screw fixation system of the noncervical spine.

When used as a pedicle screw fixation system, it is intended for patients: (a) having severe spondylolisthesis (Grades 3 and 4) of the fifth lumbar - first sacral (L5-S1) vertebral joint; (b) who are receiving fusions using autogenous bone graft only; (c) who are having the device fixed or attached to the lumbar and sacral spine; and (d) who are having the device removed after the development of a solid fusion mass. The screws of the system are limited to L3- S1 or iliac screw fixation with the fusion only at L5-S1.

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When used as an anterior fixation system or a posterior hook and sacral/iliac screw fixation system, the system is indicated for nonpedicle spinal applications for the reduction, alignment or stabilization of the thoracic, lumbar and sacral segments of the spine, in cases of: Degenerative disc disease which is defined as back pain of discogenic origin with degeneration of the disc confirmed by history and radiographic studies, spondylolisthesis, trauma, spinal stenosis, spinal deformities (scoliosis, kyphosis, lordosis), tumor, pseudoarthrosis, or revision of failed fusion attempts.

6. **Materials:** The components of the system are manufactured from Ti-6Al-4V ELI per ASTM F136. The components will be available with and without TiN coating.

7. **Comparison of the technological characteristics of the device to predicate devices:** There are no significant differences between the EBI SpineLink™ System and other currently marketed spinal systems. It is substantially equivalent* to the predicate devices in regards to intended use, materials and function. Engineering analysis comparing the modifications to the previous system demonstrated that the device complies with applicable standards and meets all of its functional requirements.

*Any statement made in conjunction with this submission regarding a determination of substantial equivalence to any other product is intended only to relate to whether the product can be lawfully marketed without pre-market approval or reclassification and is not intended to be interpreted as an admission or any other type of evidence in patent infringement litigation. [Establishment Registration and Pre-market Notification Procedures, Final Regulation, Preamble, August 23, 1977, FR 42520 (Docket No. 76N-0355.)]



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

AUG 28 1998

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

Mr. Jonas Wilf
Electro-Biology Inc.
6 Upper Pond Road
Parsippany, New Jersey 07054

Re: K982908
EBI SpineLink™ System
Regulatory Class: II
Product Codes: MNH, KWP, and KWQ
Dated: August 14, 1998
Received: August 18, 1998

Dear Mr. Wilf:

We have reviewed your Section 510(k) notification of intent to market the device system referenced above and we have determined the device system is substantially equivalent (for the indications for use stated in the enclosure) to device systems marketed in interstate commerce prior to May 28, 1976 or to devices that have been reclassified in accordance with the provisions of the Federal, Food, Drug, and Cosmetic Act (Act). This decision is based on your device system being found equivalent only to similar device systems labeled and intended for patients: (a) having severe spondylolisthesis (Grades 3 and 4) of the fifth lumbar - first sacral (L5-S1) vertebral joint; (b) who are receiving fusions using autogenous bone graft only; (c) who are having the device fixed or attached to the lumbar and sacral spine; and (d) who are having the device removed after the development of a solid fusion mass. You may, therefore, market your device system subject to the general controls provisions of the Act and the limitations identified below.

The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Note that labeling or otherwise promoting this device system for pedicular screw fixation/attachment for indications other than severe spondylolisthesis, as described above, would cause the device system to be adulterated under 501(f)(1) of the Act.

This device system, when intended for pedicular screw fixation/attachment to the spine for indications other than severe spondylolisthesis, as described above, is a class III

device under Section 513(f) of the Act. Class III devices are required to have an approved premarket approval (PMA) application prior to marketing. Accordingly:

1. All labeling for this device, including the package label, must state that there are labeling limitations. The package insert must prominently state that the device system pedicle screws is intended only for patients: (a) having severe spondylolisthesis (Grades 3 and 4) of the fifth lumbar - first sacral (L5-S1) vertebral joint; (b) who are receiving fusions using autogenous bone graft only; (c) who are having the device fixed or attached to the lumbar and sacral spine; and (d) who are having the device removed after the development of a solid fusion mass.
2. You may not label or in anyway promote this device system for pedicular, screw fixation/attachment to the cervical, thoracic or lumbar vertebral column for intended uses other than severe spondylolisthesis, as described above. The package insert must include the following statements:

WARNINGS:

- When used as a pedicle screw system, this device system is intended only for grade 3 or 4 spondylolisthesis at the fifth lumbar - first sacral (L5-S1) vertebral joint.
- The screws of this device system are not intended for insertion into the pedicles to facilitate spinal fusions above the L5-S1 vertebral joint.
- Benefit of spinal fusions utilizing any pedicle screw fixation system has not been adequately established in patients with stable spines.
- Potential risks identified with the use of this device system, which may require additional surgery, include:

device component fracture,
loss of fixation,
non-union,
fracture of the vertebra,
neurological injury, and
vascular or visceral injury.

See Warnings, Precautions, and Potential Adverse Events sections of the package insert for a complete list of potential risks.

3. Any pedicular screw fixation/attachment for intended uses other than severe spondylolisthesis, as described by item 1, for this device is considered investigational and may only be investigated as a significant risk device in accordance with the investigational device exemption (IDE) regulations under 21 CFR, Part 812. All users of the device for pedicular screw fixation/attachment for intended uses other than severe spondylolisthesis, as described above, must receive approval from their respective institutional review boards (IRBs) and the Food and Drug Administration (FDA) prior to conducting an investigation.
4. Any previous warning statements identified as part of previous 510(k) clearances or required by OC/Labeling and Promotion which stated that a component/system was not approved for screw fixation into the pedicles of the spine must be replaced by the warnings of items 1 and 2 above.

If your device is classified (see above) into either class II (Special Controls) or class III (Premarket Approval), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 895. A substantially equivalent determination assumes compliance with the current Good Manufacturing Practice requirement, as set forth in the Quality System Regulation (QS) for Medical Devices: General regulation (21 CFR Part 820) and that, through periodic (QS) inspections, the Food and Drug Administration (FDA) will verify such assumptions. Failure to comply with the GMP regulation may result in regulatory action. In addition, FDA may publish further announcements concerning your device in the Federal Register. Please note: this response to your premarket notification submission does not affect any obligation you might have under sections 531 through 542 of the Act for devices under the Electronic Product Radiation Control provisions, or other Federal Laws or Regulations.

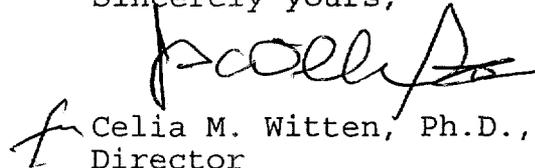
FDA advises that the use of your device system with any other device components but those identified in this 510(k) would require submission of a new 510(k) providing documentation of design, material, and labeling compatibility between the device components. Mechanical testing of a spinal system consisting of the subject device components and other device components, whether yours or those of other manufacturers, may also be required.

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This letter will allow you to begin marketing your device as described in your 510(k) premarket notification immediately. An FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4659. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address "<http://www.fda.gov/cdrh/dsmamain.html>".

Sincerely yours,


f Celia M. Witten, Ph.D., M.D.
Director
Division of General and
Restorative Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

Statement of Indications for Use:

The EBI SpineLink™ System is a spinal fixation device for pedicle screw fixation and nonpedicle hook and sacral/iliac screw fixation system of the noncervical spine.

When used as a pedicle screw fixation system, it is intended for patients: (a) having severe spondylolisthesis (Grades 3 and 4) of the fifth lumbar - first sacral (L5-S1) vertebral joint; (b) who are receiving fusions using autogenous bone graft only; (c) who are having the device fixed or attached to the lumbar and sacral spine; and (d) who are having the device removed after the development of a solid fusion mass. The screws of the system are limited to L3- S1 or iliac screw fixation with the fusion only at L5-S1.

When used as an anterior fixation system or as an posterior hook and sacral/iliac screw fixation system, the system is indicated for nonpedicle spinal applications for the reduction, alignment or stabilization of the thoracic, lumbar and sacral segments of the spine, in cases of: Degenerative disc disease which is defined as back pain of discogenic origin with degeneration of the disc confirmed by history and radiographic studies, spondylolisthesis, trauma, spinal stenosis, spinal deformities (scoliosis, kyphosis, lordosis), tumor, pseudoarthrosis, or revision of failed fusion attempts.

Prescription Use _____
(Per 21 CFR 801.109)



(Division Sign-Off)
Division of General Restorative Devices
510(k) Number K982908