



## Butler, Jennie C

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**From:** Lisa Simpson [lsimpson@rtix.com]  
**Sent:** Wednesday, August 16, 2006 5:53 PM  
**To:** Hanna, Myrna  
**Cc:** Butler, Jennie C  
**Subject:** RTI Bone Heterograft Reclassification Petition

Dear Myrna,

I wanted to let you know that none of the information submitted in the "Reclassification Petition, Bone Heterograft", dated August 10<sup>th</sup> 2006 is considered to be confidential by RTI. As such, I am giving FDA permission to distribute the information as necessary in support of the reclassification efforts.

Thank you,  
Lisa

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**List of Relevant FDA Controls and Guidances****Safety****Material/Source Control**

1. FDA Guidance Document "Medical Devices Containing Materials Derived from Animal Sources (Except for In Vitro Diagnostic Devices)" (Issued 11/6/98).
2. *The source of bovine material is a closed herd subject to USDA inspection and is covered by a USDA issued certificate stating controls are in place to mitigate risk of TSE incidence.*

**Biocompatibility**

1. FDA Good Guidance Practice Document G95-1 (ISO 10993).
2. USP (85) LAL Test for Endotoxins
3. Guidance for Industry and FDA Reviewers - Immunotoxicity Testing Guidance, May 6, 1999
4. *Specific testing performed on other class II implant devices of bovine heterograft origin: Induction of TNF $\alpha$  using RAW 264.7 cells. Addressing specific questions raised by FDA immunotoxicity expert reviewers.*
5. *A study assessed the ability of bovine bone to elicit an antigenic response when implanted in a discordant recipient (sheep).*

**Sterility**

1. Updated 510(k) Sterility Review Guidance K90-1; Final Guidance for Industry and FDA" (issued 11/16/01)
2. AAMI/ANSI/ISO 11137:1994 Sterilization of health care products - Requirements for validation and routine control-radiation sterilization.
3. *The validation study was performed to substantiate the radiation dose of 25kGy to achieve the desired SAL of  $10^{-6}$  for the established bioburden estimate of the representative product.*

**Performance**

1. Requirements for functional testing of devices in the recommended classification are well defined in FDA guidance such as: FDA Guidance "Spinal System 510(k)s", issued May 3, 2004 (excerpt below, specific to the proposed classification)
2. ASTM F1717 – "Standard Test Methods for Static and Fatigue Testing for Spinal Implants in a Vertebrectomy Model."
3. ASTM F2077 – "Test Methods for Intervertebral Body Fusion Devices."
4. Static and dynamic axial compression bending testing, static and dynamic torsion testing and expulsion testing was performed.

## List of Relevant FDA Controls and Guidances

Vertebral Body Replacement Device/System (VBR)	MQP	<ul style="list-style-type: none"> <li>• Static and dynamic axial compression bending testing</li> <li>• Static and dynamic torsion testing</li> <li>• Expulsion<sup>A</sup></li> </ul> <p>For the dynamic axial compression bending tests, we recommend that you meet one of the following conditions:</p> <ul style="list-style-type: none"> <li>• asymptotic load level <math>\geq 3000\text{N}</math> (~2x the vertebral body compression strength) at <math>5 \times 10^6</math> cycles</li> <li>• asymptotic load level <math>\geq 1500\text{N}</math> (~1x the vertebral body compression strength) at <math>10 \times 10^6</math> cycles</li> </ul>	<ul style="list-style-type: none"> <li>• Depending on the design of the VBR system, we may recommend additional testing (e.g., shear loading of a composite material, off-axis compression loading)</li> <li>• A clinical rationale for all sizes of the proposed VBR</li> </ul>
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<sup>A</sup> Expulsion testing may not be necessary for a VBR system that incorporates a supplemental fixation system that is physically attached to it (e.g., by a threaded bolt).