# CENTER FOR DRUG EVALUATION AND RESEARCH

*APPLICATION NUMBER:*

**21-536**

# MICROBIOLOGY REVIEW(S)

# Product Quality Microbiology Review

**Consult review for HFD-510**

11 JULY, 2003

| | |
|---|---|
| NDA: | 21-536 & amendment BI |
| Name of Drug: | Insulin detemir (NN304) |
| Review Number: | 1 |
| Submission Date: | December 5, 2002 |
| Applicant: | Novo Nordisk |
| Name of Reviewer: | Vinayak Pawar |
| Conclusion: | The application is recommended for approval from microbiological standpoint. |

# Product Quality Microbiology Data Sheet

A. 1. **NDA:** 21-536 & amendment BI

2. **REVIEW NUMBER:** 1

3. **REVIEW DATE:** 11 July, 2003

4. **TYPE OF SUPPLEMENT:** NA

5. **APPLICATION FOR:** Insulin Detemir, recombinant DNA origin.

6. **APPLICANT/SPONSOR:**

| | |
|---|---|
| **Name:** | Novo Nordisk Pharmaceuticals, Inc |
| **Representative:** | Elizabeth Tan |
| **Telephone:** | 609-987-5940 |

7. **MANUFACTURING SITE:** Novo Nordisk A/S, Bagsvaerd.

8. **DRUG PRODUCT NAME:**
Proprietary: Insulin Detemir (NN304)
Non-proprietary: $Lys^{\beta 29}$ ($N^{\varepsilon}$ - tetradecanoyl) des (β30) human insulin
Drug Priority Classification: Standard

9. **DOSAGE FORM, ROUTE OF ADMINISTRATION AND STRENGTH/POTENCY:** — U/mL in 10mL vials and 3mL cartridges.

10. **METHOD (S) OF STERILIZATION:** —

11. **PHARMACOLOGICAL CATEGORY:** Treatment of Diabetes Mellitus

B. 1. **DOCUMENT/LETTER DATE:** December 5, 2002
2. **RECEIPT DATE:** December 9, 2002
3. **CONSULT DATE:** December 9, 2002
4. **DATE OF AMENDMENTS:** July 2, 2003
5. **ASSIGNED FOR REVIEW:** January 7, 2003
6. **SUPPORTING/RELATED DOCUMENTS: Reference IND 51, 789**

C. **REMARKS:** The consult requests review of NDA 21-536 for an insulin detemir (r DNA origin) product to named as Levemir™ or second choice — on behalf of Novo Nordisk. The product is designed for use in 10mL vials and 3mL cartridges. The three volumes (4, 5 & 6) of the original application were submitted for review. Additional — validation and container

closure integrity information was requested on June 26, 2003. The response was submitted on July 2, 2002 as an amendment BI.

APPEARS THIS WAY
ON ORIGINAL

## *Executive Summary*

### I. Recommendations

**A. Recommendation on Approvability -**
The application is recommended for approval from microbiological standpoint based on — of the product and other sterilization validation processes.

**B. Recommendation on Phase 4 Commitments and/or Agreements, if Approvable**
NA

### II. Summary of Microbiology Assessments

**A. Brief Description of the Manufacturing Processes that relate to Product Quality Microbiology**
The manufacturing process as outlined in Fig 1 indicates that the critical operations consist of Formulation of the product followed by —

/

**B. Brief Description of Microbiology Deficiencies**
NA

**C. Assessment of Risk Due to Microbiology Deficiencies-**
NA

### III. Administrative

**A. Reviewer's Signature** _____

B. **Endorsement Block**
Vinayak Pawar/11 July 2003
Peter H. Cooney/

**C. CC Block**
cc:
Original NDA 21-536
HFD-510/Division File/Julie Rhee

8 Page(s) Withheld

✓ § 552(b)(4) Trade Secret / Confidential

___ § 552(b)(5) Deliberative Process

___ § 552(b)(5) Draft Labeling

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/s/

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Vinayak Pawar
7/21/03 02:35:08 PM
MICROBIOLOGIST

Peter Cooney
7/22/03 08:58:41 AM
MICROBIOLOGIST