

**CENTER FOR DRUG EVALUATION AND
RESEARCH**

APPLICATION NUMBER:

21-148

CHEMISTRY REVIEW(S)

DIVISION OF METABOLISM AND ENDOCRINE DRUG PRODUCTS - HFD-510
Review of Chemistry, Manufacturing and Controls

NDA 21-148

Chemistry Review # 3

Date Reviewed: 17-APR-2000

Submission Type	Document Date	CDER Rec. Date	Filing Date	User Fee I.D. #
Original	30-JUN-1999	02-JUL-1999	30-AUG-1999	3740
Amendment(s):	13-APR-2000	13-APR-2000 (facsimile copy)		

Applicant: Novo Nordisk Pharmaceutical Inc.
100 Overlook Center, Suite 200
Princeton, NJ 08540-7810

Phone: (600) 987-5800 -5973
Fax: (600) 452-1218

Drug Product Name Proprietary: Norditropin® SimpleXx™ Cartridges
Nonproprietary/Established/USAN: Somatropin (rDNA origin) for Subcutaneous Injection
Chem.Type/ Ther.Class: 3 S

Pharmacological Category/indication: Long-term treatment of children who have growth failure due to inadequate secretion of endogenous growth hormone.

Dosage Form: 1.5 mL Cartridges to be used in the NordiPen injection devices.

Strength(s): 5-, 10- and 15-mg/cartridge **Route of Administration:** Subcutaneous injection **Dispensed:** —

Chemical Name, Structural Formula, Molecular Formula, Molecular Weight:

human Growth Hormone (hGH)
Somatropin
B-hGH (Novo Nordisk's code name) .

MW = 22,125.19
CAS 12629-01-5

1
FPTIPLSRLEF QNAMLRAHRL HQLAFDTYEE FEEAYIPKEQ KYSFLQAPQA SLCFSESIPT PSNREQAQQK
71
SNLQLLRISL LLIQSWLEPV GFLRSVFANS LVYGASDSOV YDLLKDLEEG IQTLMGRLED GSPRTGQAFK
141 191
QTYAKFDANS HNDDALLKNY GLLYCFRKDM DKVETFLRIV QCRSVEGSCG F [C53-C165 & C182-C189]

Conclusions & Recommendations: Satisfactory CMC information has been provided for drug product, Norditropin® [Somatropin (rDNA origin) for subcutaneous injection] 5-mg/1.5 mL, 10-mg/1.5 mL, and 15-mg/1.5 mL cartridges. From the Chemistry viewpoint the application can be approved.

Orig. NDA 21-148
cc: HFD-510/Division-File
HFD-510/ SMalozowski / RSteigerwalt / CKing / SMopre / XYsem
HFD-820/ JGibbs

151
Xavier Ysem, PhD

R/D Init. by: 151
Stephen Moore, PhD

AP

filename: /nda/21148_3.doc

Redacted 3

pages of trade

secret and/or

confidential

commercial

information

DIVISION OF METABOLISM AND ENDOCRINE DRUG PRODUCTS - HFD-510
Review of Chemistry, Manufacturing and Controls

NDA 21-148

Chemistry Review # 2

Date Reviewed: 11-APR-2000

Submission Type	Document Date	CDER Rec. Date	Filing Date	User Fee I.D. #
Original	30-JUN-1999	02-JUL-1999	30-AUG-1999	3740
Amendment(s):	06-APR-2000	07-APR-2000		

Applicant: Novo Nordisk Pharmaceutical Inc.
100 Overlook Center, Suite 200
Princeton, NJ 08540-7810

Phone: (600) 987-5800 -5973
Fax: (600) 452-1218

Drug Product Name **Proprietary:** Norditropin® SimpleXx™ Cartridges
Nonproprietary/Established/USAN: Somatropin (rDNA origin) for Subcutaneous Injection
Chem.Type/ Ther.Class: 3 S

Pharmacological Category/indication: Long-term treatment of children who have growth failure due to inadequate secretion of endogenous growth hormone.

Dosage Form: 1.5 mL Cartridges to be used in the NordiPen injection devices.

Strength(s): 5-, 10- and 15-mg/cartridge **Route of Administration:** Subcutaneous injection **Dispensed:** _____

Chemical Name, Structural Formula, Molecular Formula, Molecular Weight:

human Growth Hormone (hGH)
Somatropin
B-hGH (Novo Nordisk's code name)

MW = 22,125.19
CAS 12629-01-5

1
FPTIPLSRLF QNAMLRAHRL HQLAFDTYEE FEEAYIPKEQ KYSFLQAPQA SLCFSESIPT PSNREQAQQK
71
SNLQLLRISL LLIQSWLEPV GFLRSVFANS LVYGASDSV YDLLKDLEEG IQTLMGRLED GSPRTGQAFK
141 191
QTYAKFDANS HNDDALLKNY GLLYCFRKDM DKVETFLRIV QCRSVEGSCG F [C53-C165 & C182-C189]

Conclusions & Recommendations: Satisfactory CMC information has been provided for drug product, Norditropin® [Somatropin (rDNA origin) for subcutaneous injection] SimpleXx™ 5-mg, 10-mg, and 15-mg cartridges. From the Chemistry viewpoint the application is approvable. See Draft Deficiencies and Comments.

Orig. NDA 21-148
cc: HFD-510/Division-File
HFD-510/ SMalozowski / RSteigerwalt / CKing / SMoore / XYsern
HFD-820/JGibbs

151

Xavier Ysern, PhD

R/D Init. by:

151

Stephen Moore, PhD

filename: /nda/21148_2.doc

AE

Redacted 4

pages of trade

secret and/or

confidential

commercial

information

DIVISION OF METABOLISM AND ENDOCRINE DRUG PRODUCTS - HFD-510
Review of Chemistry, Manufacturing and Controls

NDA 21-148

Chemistry Review # 1

Date Reviewed: 14-MAR-2000

Submission Type	Document Date	CDER Rec. Date	Filing Date	User Fee I.D. #
Original	30-JUN-1999	02-JUL-1999	30-AUG-1999	3740
Amendments:	24-FEB-2000	25-FEB-2000		
	25-FEB-2000	28-FEB-2000		

Applicant: Novo Nordisk Pharmaceutical Inc.
100 Overlook Center, Suite 200
Princeton, NJ 08540-7810

Phone: (600) 987-5800 -5973
Fax: (600) 452-1218

Drug Product Name Proprietary: Norditropin® SimpleXx™ Cartridges
Nonproprietary/Established/USAN: Somatropin (rDNA origin) for Subcutaneous Injection
Chem.Type/ Ther.Class: 3 S

Pharmacological Category/indication: Long-term treatment of children who have growth failure due to inadequate secretion of endogenous growth hormone.

Dosage Form: 1.5 mL Cartridges to be used in the NordiPen injection devices.

Strength(s): 5-, 10- and 15-mg/cartridge **Route of Administration:** Subcutaneous injection **Dispensed:** —

Chemical Name, Structural Formula, Molecular Formula, Molecular Weight:

human Growth Hormone (hGH)
Somatropin
B-hGH (Novo Nordisk's code name)

MW = 22,125.19
CAS 12629-01-5

1
FPTIPLSRLF QNAMLRAHRL HQLAFDTYEE FEEAYIPKEQ KYSFLQAPQA SLCFSESIPT PSNREQAQQK
71
SNLQLLRISL LLIQSWLEPV GFLRSVFANS LYGASDSV YDLLKDLEEG IQTLMGRLED GSPRTGQAFK
141 191
QTYAKFDANS HNDDALLKNY GLLYCFRKDM DKVETFLRIV QCRSVEGSCG F [C53-C165 & C182-C189]

Conclusions & Recommendations: Satisfactory CMC information has been provided for drug product, Norditropin® [Somatropin (rDNA origin) for subcutaneous injection] SimpleXx™ 5-mg, 10-mg, and 15-mg cartridges. From the Chemistry viewpoint the application is approvable. See Draft Deficiencies and Comments.

Orig. NDA 21-148
cc: HFD-510/Division-File
HFD-510/SMalozowski /RSteigerwalt/ JRhee/ SMoore /XYsem
HFD-820/JGibbs

51
Xavier Ysem, PhD

R/D Init. by:

Stephen Moore, PhD

filename: /nda/21148_1.doc

AE
51

Redacted 25

pages of trade

secret and/or

confidential

commercial

information