CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER: NDA 20937

CHEMISTRY REVIEW(S)

Review of Chemistry, Manufacturing, and Controls

Clinical Review Division: HFD-160 – Division of Medical Imaging and Radiopharmaceutical Drug Products

NDA #: 20-937 **CHEM. REVIEW #:** 2 **REVIEW DATE:** 10/8/99 **Revised:** 11/7/99

SUBMISSION TYPE	DOCUMENT DATE	CDER DATE	ASSIGNED DATE
Resubmisssion	6/7/99	6/8/99	6/13/99
Amendment	10/29/99	11/1/99	11/1/99

NAME & ADDRESS OF APPLICANT: Mallinckrodt Inc.
675 McDonnell Boulevard
St. Louis, Missouri 63134, USA

DRUG PRODUCT NAME

Proprietary:	Optimark™
Nonproprietary/USAN:	Gadoversetamide
Code Name/#:	MP-1177
Other Names:	Code 3425
Chem.Type/Ther.Class:	1S

Patent Status: Covered under USA Patents (expiration date): Held by Mallinckrodt: 5,130,120 (7/14/09), 5,137,711 (7/14/09), 5,508,388 (4/16/13). A five-year period of exclusivity is requested after approval of the drug product based on 21 CFR 314.108(b)(2).

PHARMACOLOGICAL CATEGORY/INDICATION: Magnetic Resonance Imaging Contrast Agent: Indicated for the detection, classification, and diagnostic characterization of hepatic disease during magnetic resonance imaging in adults.

DOSAGE FORM: Sterile solution

STRENGTHS: 5 mmol/Kg (0.1 ml/Kg) up to a maximum of 15mL

ROUTE OF ADMINISTRATION: IV

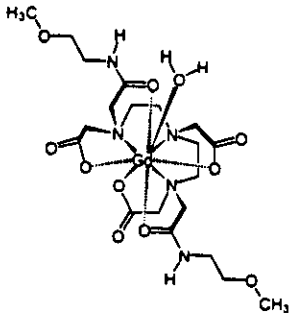
DISPENSED: R

PACKAGE SIZES: 5, 10, 15, and 20 mL vials

SPECIAL PRODUCTS: ☐ Yes ☒ No (If yes, fill out the form for special products and deliver to TIA through team leader for data entry)

CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOL. WT:

Chemical Name(s): [8,11-bis(carboxymethyl)-14-[2-[(2-methoxyethyl)amino]-2-oxoethyl]-6-oxo-2-oxa-5,8,11,14-tetraazahexadecan-16-oato (3-)] gadolinium, or
Gd[DTPA-bis(methoxyethylamide)]
CAS Registry No. 131069-91-5
Molecular Formula: $C_{20}H_{34}N_5O_{10}Gd$ (anhydrous)
Molecular Weight: 661.8 (anhydrous)



(These nominal formulas and weight do not include the labile water molecule, which is probably associated with the complex in solution as well as in solid form, which has not been aggressively dried).

SUPPORTING DOCUMENTS:

DMF

DMF

DMF

DMF

All of the listed DMFs have been previously reviewed and found to be acceptable in regards to OptiMark.

CONSULTS: Trademark Review: *Acceptable*

REMARKS/COMMENTS: This resubmission is a response to the non-approval comments and deficiencies of the original submission. The firm has satisfactorily responded to all of the specified deficiencies.

CONCLUSIONS & RECOMMENDATIONS: The application should be recommended for approval.

cc: Orig. NDA 20–937
HFD-160/Division File
HFD-160/CSO/
HFD-510/ChemDivDir/
HFD-160/ChemTL/ _____ /S/ 11/12/99
HFD-160/Chem/
HFD-160/MO/
HFD-160/MO/
HFD-160/Pharm/
HFD-160/DivDir/
filename: 37ResubA.doc

/S/

Review Chemist

Review of Chemistry, Manufacturing, and Controls

Clinical Review Division: HFD-160 – Division of Medical Imaging and Radiopharmaceutical Drug Products

NDA #: 20-937 **CHEM. REVIEW #:** 1 **REVIEW DATE:** 12/4/98 Revised: 12/7/98

SUBMISSION TYPE	DOCUMENT DATE	CDER DATE	ASSIGNED DATE
Original	2/28/98	12/27/98 (PDAMA 10 month)	3/6/98
Amendment (Env. Assessmt.)	3/24/98	3/25/98	3/27/98

NAME & ADDRESS OF APPLICANT: Mallinckrodt Inc.
675 McDonnell Boulevard
St. Louis, Missouri 63134, USA

DRUG PRODUCT NAME

Proprietary:	Optimark™
Nonproprietary/USAN:	Gadoversetamide
Code Name/#:	MP-1177
Other Names:	Code 3425
Chem.Type/Ther.Class:	1S

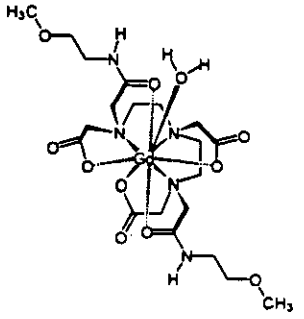
Patent Status: Covered under USA Patents (expiration date): Held by Mallinckrodt: 5,130,120 (7/14/09), 5,137,711 (7/14/09), 5,508,388 (4/16/13). A five year period of exclusivity is requested after approval of the drug product based on 21 CFR 314.108(b)(2).

PHARMACOLOGICAL CATEGORY/INDICATION: Magnetic Resonance Imaging Contrast Agent: Indicated for the detection, classification, and diagnostic characterization of hepatic disease during magnetic resonance imaging in adults.

DOSAGE FORM: Sterile solution
STRENGTHS: 5 mmol/Kg (0.1 ml/Kg) up to a maximum of 15mL
ROUTE OF ADMINISTRATION: IV
DISPENSED: R
PACKAGE SIZES: 5, 10, 15, and 20 mL vials
SPECIAL PRODUCTS: ☐ Yes ☒ No (If yes, fill out the form for special products and deliver to TIA through team leader for data entry)

CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOL. WT:

Chemical Name(s): [8,11-bis(carboxymethyl)-14-[2-[(2-methoxyethyl)amino]-2-oxoethyl]-6-oxo-2-oxa-5,8,11,14-tetraazahexadecan-16-oato (3-)] gadolinium, or
Gd[DTPA-bis(methoxyethylamide)]
CAS Registry No. 131069-91-5
Molecular Formula: $C_{20}H_{34}N_5O_{10}Gd$ (anhydrous)
Molecular Weight: 661.8 (anhydrous)



(These nominal formulas and weight do not include the labile water molecule which is probably associated with the complex in solution as well as in solid form which has not been aggressively dried).

SUPPORTING DOCUMENTS:

DMF

DMF

DMF

DMF

All of the listed DMFs have been previously reviewed and found to be acceptable in regards to OptiMark.

CONSULTS: Trademark Review: *Acceptable*

REMARKS/COMMENTS: See conclusions and recommendations below concerning in the drug product.
There are other deficiency issues which are not critical which have also been identified during the review.:

CONCLUSIONS & RECOMMENDATIONS: The application should be recommended for NON-Approval, based on the lack of accurate description of the contents of the drug product.

Critical deficiencies in the drug product section:

A critical deficiency was found in the description of the formulation and related regulatory specifications. A chemical reaction occurs during formulation (when versetamide and calcium salts are mixed) to produce calcium versetamide complex This chemical moiety is not listed as a component, even though its presence in the drug product appears to improve the pharm/tox profile of the drug, and the sponsor mentions it is being formed during a particular manufacturing step. Rather, the in-process controls for the drug substance manufacture analyze calcium content and versetamide content independently, even though they are no longer chemically separate. The presence, formation, and stability of has not been subjected to validated specifications and assays, as regulations require for functional or key excipients.

The sponsor will need to document the following to resolve the deficiencies:

1. Manufacture and full characterization of reference standard.
2. Changing the label to reflect actual chemical composition
3. Changing the drug product specifications to reflect actual chemical composition
4. Changing the manufacturing instructions to incorporate in-process controls that assay for
5. Establishment and validation of regulatory methods that determine content and limits at time of manufacture and over the proposed expiry period.

Note that the sponsor has been apprised of these deficiencies during the review process, and has agreed in principle to address them, as of the date of this review the application has not been officially amended with the required information.

Other CMC deficiencies and questions:

Drug Substance:

1. Throughout the application, the intermediate is inaccurately identified as a There are two interrelated issues:
   - Versetamide itself is not present as an independent moiety in the drug product.
   - No data has been submitted to document any chemical stabilization of the drug product by either

   The sponsor should stop calling : a in all further correspondence and submissions to this and all related NDAs.

2. In the discussion of the synthesis of versetamide, a % yield is claimed despite the fact that the versetamide is not isolated at the end of The sponsor should resolve this discrepancy.

3. Two assays, the

4. The temperature for the relaxivity measurements should be verified and reported.

5. Note that stability data for two primary stability lots (J9403PR-A and J9403PR-B) was submitted for 36 months duration at the time of NDA submission, but the statistical data analysis only included data up to 30 months. When the application is resubmitted, the sponsor should provide updated data analyses with full data sets.

Drug Product:

There are two related deficiencies relating to the application of the vial labels to the filled and vials during the packaging process:

1. There is no description in the application on how the process is performed or its controls. The sponsor should provide such description.

2. There is a contradiction in the section of the application which describes the vial labeling process. In one section a % inspection rate is claimed, but there is also a mention of the labels being checked only at time zero and then again every four hours thereafter. The sponsor should rectify this discrepancy.

Methods Validation:

The Methods Validation section should be reorganized for the resubmission to include all specifications, methods, raw data, data analysis results (graphical and tabular), and suitability results for versetamide gadoversetamide, and OptiMark. In its current form, these details are only available by searching through the corresponding volumes for each section.

cc: Orig. NDA 20-937
HFD-160/Division File
HFD-160/CSO/JMoore
HFD-510/ChemDivDir/JGibbs
HFD-160/ChemTL/ELeutzinger /S/ 12/8/98
HFD-160/Chem/DPlace
HFD-160/MO/AEJones
HFD-160/MO/RRaman/RYaes
HFD-160/Pharm/JMelograna
HFD-160/DivDir/PLove
filename: 37ALL-C.doc

/S/ 12/7/98
David A. Place, Ph.D., Review Chemist

Review of Chemistry, Manufacturing, and Controls

Clinical Review Division: HFD-160 – Division of Medical Imaging and Radiopharmaceutical Drug Products

NDA #: 20-976 **CHEM. REVIEW #:** 1 **REVIEW DATE:** 12/14/98 Revised:

SUBMISSION TYPE	DOCUMENT DATE	CDER DATE	ASSIGNED DATE
Original	2/28/98	12/27/98 (PDAMA 10 month)	3/6/98
Amendment (Env. Assessmt.)	3/24/98	3/25/98	3/27/98

NAME & ADDRESS OF APPLICANT: Mallinckrodt Inc.
675 McDonnell Boulevard
St. Louis, Missouri 63134, USA

DRUG PRODUCT NAME

Proprietary:	Optimark™ in Prefilled Ultraject Syringes
Nonproprietary/USAN:	Gadoversetamide
Code Name/#:	MP-1177
Other Names:	Code 3425
Chem.Type/Ther.Class:	1S

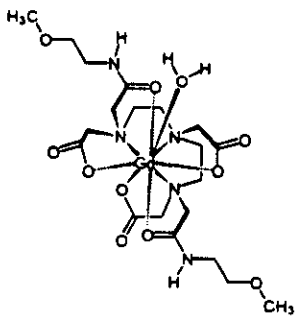
Patent Status: Covered under USA Patents (expiration date): Held by Mallinckrodt: 5,130,120 (7/14/09), 5,137,711 (7/14/09), 5,508,388 (4/16/13). A five year period of exclusivity is requested after approval of the drug product based on 21 CFR 314.108(b)(2).

PHARMACOLOGICAL CATEGORY/INDICATION: Magnetic Resonance Imaging Contrast Agent: Indicated for the detection, classification, and diagnostic characterization of hepatic disease during magnetic resonance imaging in adults.

DOSAGE FORM: Sterile solution
STRENGTHS: 5 mmol/mL (0.1 ml/Kg)
ROUTE OF ADMINISTRATION: IV
DISPENSED: Rx
PACKAGE SIZES: 10 mL, 15 mL, 20 mL, and 30 mL pre-filled single use syringes.
SPECIAL PRODUCTS: ☐ Yes ☒ No (If yes, fill out the form for special products and deliver to TIA through team leader for data entry)

CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOL. WT:

Chemical Name(s): [8,11-bis(carboxymethyl)-14-[2-[(2-methoxyethyl)amino]-2-oxoethyl]-6-oxo-2-oxa-5,8,11,14-tetraazahexadecan-16-oato (3-)] gadolinium, or
Gd[DTPA-bis(methoxyethylamide)]
CAS Registry No. 131069-91-5
Molecular Formula: $C_{20}H_{34}N_5O_{10}Gd$ (anhydrous)
Molecular Weight: 661.8 (anhydrous)



(These nominal formulas and weight do not include the labile water molecule which is probably associated with the complex in solution as well as in solid form which has not been aggressively dried).

SUPPORTING DOCUMENTS:

NDA

NDA

DMF

DMF

All of the listed DMFs have been previously reviewed and found to be acceptable in regards to OptiMark.

CONSULTS: Trademark Review: *Acceptable.*

REMARKS/COMMENTS: Refer to NDA # 20-937 for the deficiencies in common with this application. There was one specific deficiency relating to the extractables from the syringe piston elastomer.

CONCLUSIONS & RECOMMENDATIONS: The application should be recommended for NON-Approval, based on the lack of accurate description of the contents of the drug product. Refer to NDA # 20-937 for the deficiencies in common with this application.

The deficiency identified in this application relates to the extractables from the elastomeric syringe piston. In testing performed by mg of solids were obtained in mL of drug product vehicle extract. Since these aqueous extracts may be representative of impurities that could leach out of the piston in the filled syringes, the sponsor should identify the components and composition of these extracts, and describe the role that any of these impurities may have on the purity of the drug product over the full expiry period.

cc: Orig. NDA 20–976
HFD-160/Division File
HFD-160/CSO/JMoore
HFD-510/ChemDivDir/JGibbs
HFD-160/ChemTL/ELeutzinger
HFD-160/Chem/DPlace
HFD-160/MO/AEJones
HFD-160/MO/RRaman/RYaes
HFD-160/Pharm/JMelograna
HFD-160/DivDir/PLove
filename: 76ALL-A.doc

/S/
14-Dec-98

/S/ 12/14/98
David A. Place, Ph.D., Review Chemist

Review of Chemistry, Manufacturing, and Controls

Clinical Review Division: HFD-160 – Division of Medical Imaging and Radiopharmaceutical Drug Products

NDA #: 20-976 **CHEM. REVIEW #:** 2 **REVIEW DATE:** 10/8/99 **Revised:** 11/7/99

SUBMISSION TYPE	DOCUMENT DATE	CDER DATE	ASSIGNED DATE
Resubmisssion	6/7/99	6/8/99	6/13/99
Amendment	10/29/99	11/1/99	11/1/99

NAME & ADDRESS OF APPLICANT: Mallinckrodt Inc.
675 McDonnell Boulevard
St. Louis, Missouri 63134, USA

DRUG PRODUCT NAME

Proprietary:	Optimark™ in Prefilled Ultraject Syringes
Nonproprietary/USAN:	Gadoversetamide
Code Name/#:	MP-1177
Other Names:	Code 3425
Chem.Type/Ther.Class:	1S

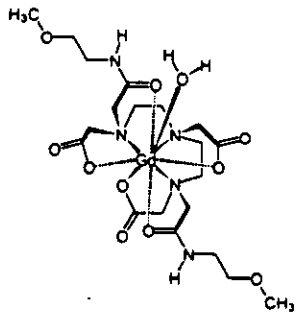
Patent Status: Covered under USA Patents (expiration date): Held by Mallinckrodt: 5,130,120 (7/14/09), 5,137,711 (7/14/09), 5,508,388 (4/16/13). A five year period of exclusivity is requested after approval of the drug product based on 21 CFR 314.108(b)(2).

PHARMACOLOGICAL CATEGORY/INDICATION: Magnetic Resonance Imaging Contrast Agent: Indicated for the detection, classification, and diagnostic characterization of hepatic disease during magnetic resonance imaging in adults.

DOSAGE FORM: Sterile solution
STRENGTHS: 5 mmol/mL (0.1 ml/Kg)
ROUTE OF ADMINISTRATION: IV
DISPENSED: R
PACKAGE SIZES: 10 mL, 15 mL, 20 mL, and 30 mL pre-filled single use syringes.
SPECIAL PRODUCTS: ☐ Yes ☒ No (If yes, fill out the form for special products and deliver to TIA through team leader for data entry)

CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOL. WT:

Chemical Name(s): [8,11-bis(carboxymethyl)-14-[2-[(2-methoxyethyl)amino]-2-oxoethyl]-6-oxo-2-oxa-5,8,11,14-tetraazahexadecan-16-oato (3-)] gadolinium, or
Gd[DTPA-bis(methoxyethylamide)]
CAS Registry No. 131069-91-5
Molecular Formula: $C_{20}H_{34}N_5O_{10}Gd$ (anhydrous)
Molecular Weight: 661.8 (anhydrous)



(These nominal formulas and weight do not include the labile water molecule, which is probably associated with the complex in solution as well as in solid form that has not been aggressively dried).

SUPPORTING DOCUMENTS:

NDA

NDA

DMF

DMF

All of the listed DMFs have been previously reviewed and found to be acceptable in regards to OptiMark.

CONSULTS: Trademark Review: *Acceptable.*

REMARKS/COMMENTS: CMC review is satisfactory. Refer to NDA # 20-937 review # 2 for common labeling revision recommendations.

CONCLUSIONS & RECOMMENDATIONS: As for NDA, # 20-937, an approval action is recommended, based on common CMC information.

cc: Orig. NDA 20–976
HFD-160/Division File
HFD-160/CSO/
HFD-510/ChemDivDir/
HFD-160/ChemTL/ _____ /S/ 11/12/99
HFD-160/Chem/
HFD-160/MO/
HFD-160/MO/
HFD-160/Pharm/
HFD-160/DivDir/
filename: 76resubA.doc

/S/
_____
Review Chemist

Review of Chemistry, Manufacturing, and Controls

Clinical Review Division: HFD-160 – Division of Medical Imaging and Radiopharmaceutical Drug Products

NDA #: 20-975 **CHEM. REVIEW #:** 2 **REVIEW DATE:** 10/8/99 **Revised:** 11/7/99

SUBMISSION TYPE	DOCUMENT DATE	CDER DATE	ASSIGNED DATE
Resubmisssion	6/7/99	6/8/99	6/13/99
Amendment	10/29/99	11/1/99	11/1/99

NAME & ADDRESS OF APPLICANT: Mallinckrodt Inc.
675 McDonnell Boulevard
St. Louis, Missouri 63134, USA

DRUG PRODUCT NAME

Proprietary:	Optimark™ Injection
Nonproprietary/USAN:	Gadoversetamide
Code Name/#:	MP-1177
Other Names:	Code 3425
Chem.Type/Ther.Class:	1S

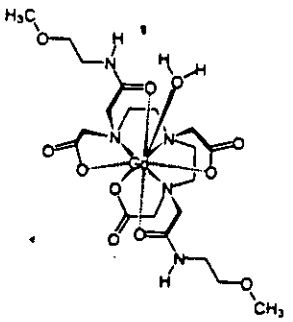
Patent Status: Covered under USA Patents (expiration date): Held by Mallinckrodt: 5,130,120 (7/14/09), 5,137,711 (7/14/09), 5,508,388 (4/16/13). A five year period of exclusivity is requested after approval of the drug product based on 21 CFR 314.108(b)(2).

PHARMACOLOGICAL CATEGORY/INDICATION: Magnetic Resonance Imaging Contrast Agent: Indicated for the detection, classification, and diagnostic characterization of hepatic disease during magnetic resonance imaging in adults.

DOSAGE FORM: Sterile solution
STRENGTHS: 5 mmol/mL (0.1 ml/Kg)
ROUTE OF ADMINISTRATION: IV
DISPENSED: R
PACKAGE SIZES: 50 mL (Pharmacy Bulk Pack)
SPECIAL PRODUCTS: ☐ Yes ☒ No (If yes, fill out the form for special products and deliver to TIA through team leader for data entry)

CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOL. WT:

Chemical Name(s): [8,11-bis(carboxymethyl)-14-[2-[(2-methoxyethyl)amino]-2-oxoethyl]-6-oxo-2-oxa-5,8,11,14-tetraazahexadecan-16-oato (3-)] gadolinium, or
Gd[DTPA-bis(methoxyethylamide)]
CAS Registry No. 131069-91-5
Molecular Formula: $C_{20}H_{34}N_5O_{10}Gd$ (anhydrous)
Molecular Weight: 661.8 (anhydrous)



(These nominal formulas and weight do not include the labile water molecule, which is probably associated with the complex in solution as well as in solid form that has not been aggressively dried).

SUPPORTING DOCUMENTS:

NDA

NDA

DMF

DMF

DMF

DMF

All of the listed DMFs have been previously reviewed and found to be acceptable in regards to OptiMark.

CONSULTS: Trademark Review: *Acceptable.*

REMARKS/COMMENTS: CMC review is satisfactory. Refer to NDA # 20-937 review # 2 for common labeling revision recommendations.

CONCLUSIONS & RECOMMENDATIONS: As for NDA, # 20-937, an approval action is recommended, based on common CMC information.

cc: Orig. NDA 20–975
HFD-160/Division File
HFD-160/CSO/
HFD-510/ChemDivDir/
HFD-160/ChemTL/ _____ /S/ 11/12/99
HFD-160/Chem/
HFD-160/MO/
HFD-160/MO/
HFD-160/Pharm/
HFD-160/DivDir/
filename: 75resubB.doc

/S/
Review Chemist

DIVISION OF MEDICAL IMAGING AND RADIOPHARMACEUTICAL DRUG PRODUCTS
Review of Chemistry, Manufacturing, and Controls

NDA #: 20-975 **DATE REVIEWED:** December 14, 1998

REVIEW #: 1 **REVIEWER:** Ravi S. Harapanhalli, Ph.D.

SUBMISSION TYPE	DOCUMENT DATE	CDER DATE	ASSIGNED DATE
Original NDA20-975	2/28/98	12/27/98	12/11/98
BC	3/24/98	12/27/98	12/11/98

NAME & ADDRESS OF APPLICANT: Mallinckrodt Inc.
675 McDonnell Boulevard
St. Louis, Missouri 63134, USA

DRUG PRODUCT NAME

Proprietary:	Optimark™
Established:	Gadoversetamide
Code Name/#:	MP-1177
Other Names:	Code 3425
Chem.Type/Ther.Class:	Diagnostic, 1S

Patent Status: Covered under USA Patents (expiration date): Held by Mallinckrodt: 5,130,120 (7/14/09), 5,137,711 (7/14/09), 5,508,388 (4/16/13). A five year period of exclusivity is requested after approval of the drug product based on 21 CFR 314.108(b)(2).

PHARMACOL. CATEGORY/INDICATION: Magnetic Resonance Imaging Contrast Agent: Indicated for the detection, classification, and diagnostic characterization of hepatic disease during magnetic resonance imaging in adults.

DOSAGE FORM: Sterile solution

STRENGTHS: 5 mmol/mL (0.1 ml/Kg) POTENCY(IES)

ROUTE OF ADMINISTRATION: Intravenous

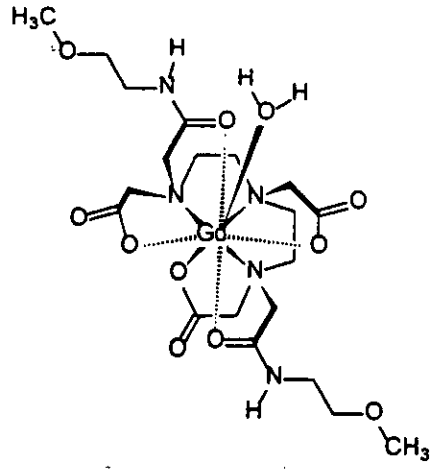
Rx/OTC: X Rx __OTC

PACKAGE SIZE: 50 ml Pharmacy Bulk Package

SPECIAL PRODUCTS: X No

CHEMICAL NAME, STRUCTURAL FORMULA, MOLECULAR FORMULA, MOLECULAR WEIGHT:

Chemical name: [8,11-bis(carboxymethyl)-14-[2-[(2-methoxyethyl)amino]-2-oxoethyl]-6-oxo-2-oxa-5,8,11,14-tetraazahexadecan-16-oato (3-)] gadolinium, or Gd[DTPA-bis(methoxyethylamide)]
CAS #: 131069-91-5,
Molecular formula: $C_{20}H_{34}N_5O_{10}Gd$ (anhydrous), Molecular weight: 661.8 (anhydrous)



SUPPORTING DOCUMENTS:

Type/Number	Subject	Holder	Status	Review Date	Letter Date
DMF	Flint type 1 glass vials		Current holder	12/15/98	12/15/98
DMF	Rubber Stoppers Manufacturing.		Current holder	07/29/98	07/29/98
DMF	Rubber Stoppers Sanitization		Current holder	07/29/98	07/29/98

DMF is inadequate to support the NDA. The other two are found adequate.

RELATED DOCUMENTS: NDA20-937, and CMC review of NDA20-937 by David Place, Ph.D.

CONSULTS: Trademark Review: *Acceptable*

REMARKS: This is a companion NDA to NDA 20-937 and pertains to pharmacy bulk packaging. The main NDA 20-937 was reviewed by David Place, Ph.D. and was recommended for nonapproval. NDA 20-975 was assigned to this reviewer on 12/11/98 with the understanding that the review will be completed by 12/14/98. Several deficiencies were noted and were discussed with lead reviewer David Place, Ph.D. The issues common to this and the main NDA were discussed at length. All other issues were grouped into two categories (1) critical deficiencies related to the nonapproval of NDA, and (2) other less critical deficiencies.

CONCLUSIONS & RECOMMENDATIONS: The application should be recommended for NON-Approval, in parallel with the recommendations to the NDA 20-937 which is based on the lack of accurate description of the contents of the drug product.

/S/ 12/17/98

Ravi S. Harapanhalli, Ph.D., Review Chemist
Revised on 12/17/98

/S/ 12/17/98

cc:
Org. NDA 20-975, and NDA 20-937
HFD-160 Division File
HFD-160/Harapanhalli and Place/12/14/98
HFD-160/PM/James Moore
HFD-160/TEAMLEADER/Leutzinger
HFD-820/DIVISION DIRECTOR/John Gibbs, Ph.D.
HFD-160/Med TL/Jones, MD
HFD-160/MO/Raman and Yaes
HFD-160/PharmTox/Melograna
HFD-160/ DIVISION DIRECTOR /Patricia Love, MD
R/D Init by: TEAMLEADER
filename: **c:/mydocuments/NDA20975**