CENTER FOR DRUG EVALUATION AND RESEARCH

Approval Package for:

APPLICATION NUMBER:

19-044 / S-016

Trade Name: Indium In-111 Oxyquinoline

Generic Name:

Sponsor: GE Healthcare

Approval Date: August 2, 2000

Indications: For a new in-process control

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

19-044 / S-016

CONTENTS

Reviews / Information Included in this NDA Review.

Approval Letter	**X**
Other Action Letters	**X**
Labeling	
Summary Review	
Officer/Employee List	
Office Director Memo	
Cross Discipline Team Leader Review	
Medical Review(s)	
Chemistry Review(s)	**X**
Environmental Assessment	
Pharmacology Review(s)	
Statistical Review(s)	
Microbiology Review(s)	
Clinical Pharmacology/Biopharmaceutics Review(s)	
Other Reviews	
Risk Assessment and Risk Mitigation Review(s)	
Proprietary Name Review(s)	
Administrative/Correspondence Document(s)	**X**

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

19-044 / S-016

APPROVAL LETTER

DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Food and Drug Administration
Rockville MD 20857

AUG 2 2000

NDA 19-044/S-016

Nycomed Amersham Imaging
Attention: Joseph A. Pierro, M.D.
Acting Vice President Regulatory Affairs
101 Carnegie Center
Princeton, NJ 08540-6231

Dear Dr. Pierro:

Please refer to your supplemental new drug applications dated February 1, 1999, received February 2, 1999, and May 25, 2000, received May 26, 2000, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for Indium-111 Oxine. Reference is also made to the FDA non-approvable letter dated April 7, 1999, and the teleconference on May 23, 2000 between Dr. David Place, Ms. Helen Hammes, and yourself.

This supplemental new drug application as amended provides for a new in-process control for [redacted] (b) (4) of not more than [redacted] (b) (4) Indium [redacted] (b) (4) impurity at the time of measurement.

We have completed the review of this supplemental application as amended, and it is approved.

We remind you that you must comply with the requirements for an approved NDA set forth under 21 CFR 314.80 and 314.81.

If you have any questions, call Tia Harper-Velazquez, Pharm.D., Project Manager, at (301) 827-7510.

Sincerely,

Eldon E. Leutzinger

Eldon E. Leutzinger, Ph.D.
Chemistry Team Leader for the
Division of Medical Imaging and
Radiopharmaceutical Drug Products, (HFD-160)
DNDC II, Office of New Drug Chemistry
Center for Drug Evaluation and Research

NDA 19-044/S016

cc:
Archival NDA 19-044
HFD-160/Div. Files
HFD-820/Leutzinger/Place
HFD-160/T.Harper-Velazquez
HFD-095/DDMS-IMT
HFD-820/DNDC Division Director
DISTRICT OFFICE

Drafted by: THV/August 1, 2000
Initialed by: 8/2/2000
final: 8/2/00
filename: C/Mydocuments/NDA19044/Suppl.016.AP

APPROVAL (AP)

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

19-044 / S-016

OTHER ACTION LETTER(s)

NDA 19-044/SCS-016

Medi-Physics, Inc.
Attention: Susan Olinger
Director, Drug Regulatory Affairs
2636 S. Clearbrook Drive
Arlington Heights, IL 60005

Dear: Ms. Olinger

Please refer to your supplemental new drug application dated February 1, 1999, received February 2, 1999, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for Indium In-111 Oxine. Reference is made to your correspondence, dated February 19, 1999 and to our telephone conferences on January 19 and 26, 1999 between Ms. Olinger, your regulatory affairs staff and our chemists, Drs. Leutzinger and Place, during consultative review of the supplemental application for Indiclor (CBER NDA No. 19-682/S(b) (4), letter dated (b) (4)).

(b) (4)

We have completed our review and find the information presented is inadequate, and the supplemental application is not approvable under Section 505(d) of the Act and 21 CFR 314.70(b).

1. The current in-process specification may not be meaningful in view of these process changes. However, you provided insufficient data and manufacturing information to justify the (b) (4) (b) (4) of the specification. You should modify the in-process specification and its reference date to comply with your current manufacturing processes. You should propose reasonable limits for the (b) (4) impurity and specify appropriate time intervals for its use, based on current process data.

2. We remind you that all manufacturing supplements require the full address of the applicant as well as the site where the manufacturing occurs. You should submit this information in future supplements.

Within 10 days after the date of this letter, you are required to amend the supplemental

application, notify us of your intent to file an amendment, or follow one of your other options under 21 CFR 314.120. In the absence of any such action FDA may proceed to withdraw the application. Any amendment should respond to all the deficiencies listed. We will not process a partial reply as a major amendment nor will the review clock be reactivated until all deficiencies have been addressed.

If you have any questions, contact Patricia Stewart, Regulatory Project Manager, at (301) 827-7510.

Sincerely,

Eldon Leutzinger, Ph.D.
Chemistry Team Leader for the
Division of Medical Imaging and Radiopharmaceutical
Drug Products, (HFD-160)
DNDC II, Office of New Drug Chemistry
Center for Drug Evaluation and Research

cc:

Archival NDA 19-044
HFD-160/Div. Files
HFD-160/P.Stewart/Leedham
HFD-160/Leutzinger/Place
HFD-95/DDMS
HFD-820/DNDC Division Director
DISTRICT OFFICE

Drafted by: pas/April 5, 1999
Initialed by:
final:
filename: Indium

NOT APPROVABLE (NA)

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

19-044 / S-016

CHEMISTRY REVIEW(S)

CHEMIST'S REVIEW

1. Organization HFD-160

2. NDA No. 19–044

3. Name and Address of Applicant:
Nycomed Amersham Imaging, 101 Carnegie Center
Princeton, NJ 08540–6231
Phone: (609) 514–6815

4. Supplement No. SCS-016AC

5. DATES
Original Supplement: 2/1/1999

6. Name of Drug: In-111 Oxine

Alternate Name: ^{111}In Oxyquinoline, In-111 Oxine
Code Name:

8. Supplement Amendment Provides For:
- Clarifications of changes in the manufacturing process.
- Establishment of a new in-process control for [redacted] (b) (4)
- Addresses of manufacturing and management sites.

9. Amendments and Other–Dates:

This Amendment: 5/25/2000

10. Pharmacological Category:
Diagnostic Radiopharmaceutical

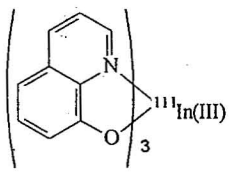
11. Dispensed By:
Rx [X] OTC [ ]

12. Related IND/NDA/DMF:
CBER NDA [redacted] (b) (4) for [redacted] (b) (4)

13. Dosage Forms: The solution is used for the radiolabeling of autologous leucocytes. The resulting labeled mixture is administered by intravenous injection.

14. Potencies: Product vial is calibrated to contain 1 mCi/mL of [redacted] (b) (4) ^{111}In Oxine at time of reference.

15. Chemical Name and Structure:
Name: ^{111}*In*-Indium Oxyquinoline;
Tris-(8-quinolinato)indium-111In;
Complex (1:3) of Indium-111 with 8-oxyquinolate]
Molecular Formula: $C_{27}H_{18}N_3O_3{}^{111}In$
Molecular Weight: 543.5



16a. Records and Reports Current
[X] Yes [ ] No
Reviewed
[X] Yes [ ] No
16b. SPOTS [ ] Yes [X] No

17. Comments: The sponsor responds to the three deficiencies identified during review of original supplement SCS-016, (FDA non-approval letter to firm dated 4/7/99). All responses are satisfactory.

18. Conclusions and Recommendations: This supplement, as amended, is now recommended for approval.

19. Reviewer: David A. Place, Ph.D.

Signature: David A. Place

Filename: C:\DATA\Word7Files\N19-044\SCS16Amd.doc

Date: 7/24/2000

Supervisory Concurrence:
7/26/2000 by: E. Leutzinger,
Date Chemistry Team Leader

cc: Orig. NDA No. 19–044
HFD–160/NDA 19-044/Div File
HFD–160/820/CDERChemTL/ELeutzinger
HFD–160/820/CDERChem/DPlace

JUL 26 2000

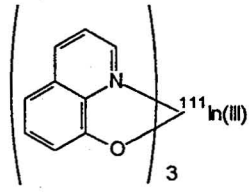
2 Pages have been Withheld as b4 (CCI/TS) immediately following this page

CHEMISTRY REVIEW

OF **SUPPLEMENT**

APR -7 1999

1. **ORGANIZATION:** HFD-160
2. **NDA NUMBER:** 19–044
3. **SUPPLEMENT NUMBERS/DATES:** SCS-016
   Letterdate: 2/1/99 **Stampdate:** 2/9/99
4. **AMENDMENTS/REPORTS/DATES:** NA
   Letterdate: **Stampdate:**
5. **RECEIVED BY CHEMIST:** 3/8/99
6. **APPLICANT NAME AND ADDRESS:** MediPhysics
   466 Devon Park Drive, PO Box 6630, Wayne, PA 19087–8630, Telephone (610) 225–4161
7. **NAME OF DRUG:** Indium Oxine
8. **NONPROPRIETARY NAME:** In-111 Oxyquinoline Solution for the labeling of autologous leukocytes
9. **CHEMICAL NAME and STRUCTURE:** Tris-(8-quinolinato)indium-^{111}In; [Complex (1:3) of Indium-111 with 8-oxyquinolate]. Molecular Formula: $C_{27}H_{18}N_3O_3{}^{111}In$ Molecular Weight: 543.5



10. **DOSAGE FORM(S):** Intravenous Injection
11. **POTENCY:** 1 mCi/mL ^{111}In
12. **PHARMACOLOGICAL CATEGORY:** Diagnostic Radiopharmaceutical
13. **HOW DISPENSED:** Rx
14. **RECORDS & REPORTS CURRENT:** Yes
15. **RELATED IND/NDA/DMF:** NDA 19-862/S(b) (4) (CBER) for (b) (4)
16. **SUPPLEMENT PROVIDES FOR:** (b) (4) of in-process specification for (b) (4) impurity in the (b) (4).
17. **COMMENTS:** The sponsor proposes to (b) (4) an in-process specification (b) (4) (b) (4).
18. **CONCLUSIONS AND RECOMMENDATIONS:** Rather than (b) (4) the in-process specification, the sponsor should submit a proposal to modify the in-process specification. Recommendation is for the supplement to NOT be appproved.
19. **REVIEWER NAME** **SIGNATURE** **DATE COMPLETED**

David A. Place, Ph.D. David A Place 3/29/99

cc: HFD-160/Original NDA
HFD-160/DivFile
HFD-160/CSO/RKLeedham
HFD-160/820/ChemTL/Eleutzinger E Eleutzinger 3/31/99
HFD-160/820/Chem/DPlace

Draft Letter

(b) (4)

MEMORANDUM

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
FOOD AND DRUG ADMINISTRATION
CENTER FOR DRUG EVALUATION AND RESEARCH

APR - 7 1999

DATE: March 12, 1999

FROM: David A. Place, Ph.D.
Reviewing Chemist
(301) 827-7502
DAPlace 3/12/99

SUBJECT: NDA 19–044 / SCS-016: ^{111}In Oxine

TO: Eldon Leutzinger, PhD
Chemistry Team Leader, Division of New Drug Chemistry II

During our recent consult review of Indiclor (CBER NDA # 19-862/S (b) (4)), we recommended that the (b) (4)

During the course of the consult review, we were in phone and FAX communications with Nycomed Amersham throughout January and February of 1999. One of the results of these conversations was the sponsor's realization that for NDA 19-044 (^{111}In Oxine), which uses the (b) (4) (b) (4), a similar supplement had not been submitted to CDER/HFD-160. Before the NA letter for NDA (b) (4)/S (b) (4) issued from CBER on (b) (4), Nycomed Amersham submitted this brief supplement bearing the (b) (4) (b) (4).

Therefore, the same recommendations hold for this supplement:

1. The revised manufacturing processes need to be described to justify the change.
2. The in-process specification should be revised, (b) (4).
3. Addresses of the manufacturing site should be included in all manufacturing supplements.

A draft letter, based on the text from the CBER NDA 19-862 2/12/99 letter, follows below.

Attachment: Action letter for CBER NDA 19-862, dated 2/12/99.

cc: Orig. NDA No. 19–044
HFD–160/Div File
HFD–160/CSO/RKLeedham
HFD–160&820/ChemTL/ELeutzinger
HFD–160&820/DPlace

Draft Letter/CMC/19-044(SCS-016)

(b) (4)

CENTER FOR DRUG EVALUATION AND RESEARCH

APPLICATION NUMBER:

19-044 / S-016

ADMINISTRATIVE and CORRESPONDENCE DOCUMENTS

ORIGINAL

May 25, 2000

SCS-16/AC

Nycomed Amersham

Nycomed Amersham Imaging

101 Carnegie Center
Princeton, NJ 08540-6231
609 514 6000

Dr. Eldon Leutzinger
Division of Medical Imaging and Radiopharmaceutical Drug Products
HFD-160
Office of Drug Evaluation III
Center for Drug Evaluation and Research
Document Control Room 18B-06
Food and Drug Administration
5600 Fishers Lane
Rockville, MD 20857-1706

NDA SUPP AMEND

Re: NDA 19-044/S-016
Indium 111 Oxine

Dear Dr. Leutzinger,

Medi-Physics Inc., dba Nycomed Amersham Imaging references NDA 19-044 Supplement S-016 submitted February 1, 1999, the FDA non approvable letter dated April 7, 1999 and a telephone discussion on May 23, 2000 between Dr. David Place, Ms. Helen Hammes and I.

Per our discussion, we are submitting a copy of our response to the Agency's questions based on their review of NDA 19-862 Indium 111 Chloride Supplement S-(b) (4). (b) (4) (b) (4) (b) (4) our response to the Agency's questions are relevant to both NDAs. As agreed with Dr. Place, we are submitting that response to this NDA. This action concludes our response to the April 7, 1999 non approval letter.

19-862

This submission is provided in duplicate. A form FDA 356h and Table of Contents are attached.

We understand that all information contained herein, unless otherwise made public by Nycomed, Inc., is CONFIDENTIAL.

Please contact Joseph A. Pierro, M.D. at (609) 514-6815 or Ms. Helen Hammes at (609) 514-6817 if you should have any questions or require further information.

Sincerely,

Joseph A. Pierro, M.D.
Acting Vice President
Regulatory Affairs

REVIEWS COMPLETED
CSO ACTION:
☐ LETTER ☐ N.A.I. ☐ MEMO
CSO INITIALS DATE

DEPARTMENT OF HEALTH AND HUMAN SERVICES
FOOD AND DRUG ADMINISTRATION

APPLICATION TO MARKET A NEW DRUG, BIOLOGIC, OR AN ANTIBIOTIC DRUG FOR HUMAN USE

(Title 21, Code of Federal Regulations, 314 & 601)

Form Approved: OMB No. 0910-0338
Expiration Date: April 30, 2000
See OMB Statement on last page.

FOR FDA USE ONLY

APPLICATION NUMBER

NDA 19-044

APPLICATION INFORMATION

NAME OF APPLICANT	DATE OF SUBMISSION
Medi-Physics, Inc.	February 1, 1999
TELEPHONE NO. *(Include Area Code)*	**FACSIMILE (FAX) Number** *(Include Area Code)*
(610) 225-4107	(610) 225-4407

APPLICANT ADDRESS *(Number, Street, City, State, County, ZIP Code or Mail Code and U.S. License number if previously issued):*

466 Devon Park Drive
P.O. Box 6630
Wayne, PA 19087-8630

AUTHORIZED U.S. AGENT NAME & ADDRESS *(Number, Street, City, State, ZIP Code telephone & FAX number)* IF APPLICABLE

PRODUCT DESCRIPTION

NEW DRUG OR ANTIBIOTIC APPLICATION NUMBER, OR BIOLOGICS LICENSE APPLICATION NUMBER (If previously issued)

ESTABLISHED NAME *(e.g., Proper name, USP/USAN name)*	PROPRIETARY NAME *(trade name)* IF ANY
Indium In-111 Oxyquinoline Solution	Indium Oxine

CHEMICAL/BIOLOGICAL/BLOOD PRODUCT NAME *(If any)*	CODE NAME *(If any)*
NA	

DOSAGE FORM:	STRENGTHS:	ROUTE OF ADMINISTRATION:
Solution	1 mCi/mL	IV

(PROPOSED) INDICATION(S) FOR USE:
Radiolabeling of autologous leukocytes.

APPLICATION INFORMATION

APPLICATION TYPE (check one)
■ NEW DRUG APPLICATION (21 CFR 314.50) ☐ ABBREVIATED APPLICATION (ANDA, AADA, 21 CFR 314.94)
☐ BIOLOGICS LICENSE APPLICATION (21 CFR part 601)

IF AN NDA, IDENTIFY THE APPROPRIATE TYPE ■ 505 (b) (1) ☐ 505 (b) (2) ☐ 507

IF AN ANDA, OR AADA, IDENTIFY THE REFERENCE LISTED DRUG PRODUCT THAT IS THE BASIS FOR THE SUBMISSION
Name of Drug — Holder of Approved Application

TYPE OF SUBMISSION (check one)
☐ ORIGINAL APPLICATION ☐ AMENDMENT TO A PENDING APPLICATION ☐ RESUBMISSION
☐ PRESUBMISSION ☐ ANNUAL REPORT ☐ ESTABLISHMENT DESCRIPTION SUPPLEMENT ☐ SUPAC SUPPLEMENT
☐ EFFICACY SUPPLEMENT ☐ LABELING SUPPLEMENT ■ CHEMISTRY MANUFACTURING AND CONTROLS SUPPLEMENT ☐ OTHER

REASON FOR SUBMISSION
To keep the final drug product release specification of NMT 0.1% for the drug product

PROPOSED MARKETING STATUS (check one) ■ PRESCRIPTION PRODUCT (Rx) ☐ OVER THE COUNTER PRODUCT (OTC)

NUMBER OF VOLUMES SUBMITTED 1 — THIS APPLICATION IS ■ PAPER ☐ PAPER AND ELECTRONIC ☐ ELECTRONIC

ESTABLISHMENT INFORMATION

Provide locations of all manufacturing, packaging and control sites for drug substance and drug product (continuation sheets may be used if necessary). Include name, address, contact, telephone number, registration number (CFN), DMF number, and manufacturing steps and/or type of testing (e.g. Final dosage form, Stability testing) conducted at the site. Please indicate whether the site is ready for inspection or, if not, when it will be ready.

Amersham Laboratories
Amersham, UK

Cross References (list related License Applications, INDs, NDAs, PMAs, 510(k)s, IDEs, BMFs, and DMFs referenced in the current application)

NDA 19-044

This application contains the following items: *(Check all that apply)*	
	1. Index
	2. Labeling (check one) ☐ Draft labeling ☐ Final Printed Labeling
	3. Summary (21 CFR 314.50 (c))
x	4. Chemistry Section
x	A. Chemistry, manufacturing, and controls information (e.g. 21 CFR 314.50 (d) (1), 21 CFR 601.2)
	B. Samples (21 CFR 314.50 (e) (1), 21 CFR 601.2 (a)) (Submit only upon FDA's request)
	C. Methods validation package (e.g. 21 CFR 314.50 (e) (2) (i), 21 CFR 601.2)
	5. Nonclinical pharmacology and toxicology section (e.g. 21 CFR 314.50 (d) (2), 21 CFR 601.2)
	6. Human pharmacokinetics and bioavailability section (e.g. 21 CFR 314.50 (d) (3), 21 CFR 601.2)
	7. Clinical Microbiology (e.g. 21 CFR 314.50 (d) (4))
	8. Clinical data section (e.g. 21 CFR 314.50 (d) (5), 21 CFR 601.2)
	9. Safety update report (e.g. 21 CFR 314.50 (d) (5) (vi) (b), 21 CFR 601.2)
	10. Statistical section (e.g. 21 CFR 314.50 (d) (6), 21 CFR 601.2)
	11. Case report tabulations (e.g. 21 CFR 314.50 (f) (1), 21 CFR 601.2)
	12. Case reports forms (e.g. 21 CFR 314.50 (f) (2), 21 CFR 601.2)
	13. Patent information on any patent which claims the drug (21 U.S.C. 355 (b) or (c))
	14. A patent certification with respect to any patent which claims the drug (21 U.S.C 355 (b) (2) or (j) (2) (A))
	15. Establishment description (21 CFR Part 600, if applicable)
	16. Debarment certification (FD & C Act 306 (k)(1))
	17. Field copy certification (21 CFR 314.5 (k) (3))
	18. User Fee Cover Sheet (Form FDA 3397)
	19. OTHER (Specify)

CERTIFICATION

I agree to update this application with new safety information about the product that may reasonably affect the statement of contraindications, warnings, precautions, or adverse reactions in the draft labeling. I agree to submit safety update reports as provided for by regulation or as requested by FDA. If this application is approved, I agree to comply with all applicable laws and regulations that apply to approved applications, including, but not limited to the following:

1. Good manufacturing practice regulations in 21 CFR 210 and 211, 606, and/or 820.
2. Biological establishment standards in 21 CFR Part 600.
3. Labeling regulations in 21 CFR 201, 606, 610, 660 and/or 809.
4. In the case of a prescription drug or biological product, prescription drug advertising regulations in 21 CFR 202.
5. Regulations on making changes in application in 21 CFR 314.70, 314.71, 314.72, 314.97, 314.99. and 601.12.
6. Regulations on reports in 21 CFR 314.80, 314.81, 600.80 and 600.81.
7. Local, state and Federal environmental impact laws.

If this application applies to a drug product that FDA has proposed for scheduling under the Controlled Substances Act I agree not to market the product until the Drug Enforcement Administration makes a final scheduling decision.
The data and information in this submission have been reviewed and to the best of my knowledge are certified to be true and accurate.
Warning: a willfully false statement is a criminal offense, U.S. Code, title 18, section 1001.

SIGNATURE OF RESPONSIBLE OFFICIAL OR AGENT	TYPED NAME AND TITLE	DATE
for Susan Olinger	Susan K.Olinger, Director QARA	February 1, 1999

ADDRESS (*Street, City, State, and ZIP CODE*)	Telephone Number
466 Devon Park Drive P.O. Box 6630 Wayne, PA 19087-8630	(610) 225-4107

Public reporting burden for this collection of information is estimated to average 40 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to:

DHHS, Reports Clearance Officer
Paperwork Reduction Project (0910-0338)
Hubert H. Humphrey Building, Room 531-H
200 Independence Avenue, S.W.
Washington, DC 20201

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Please **DO NOT RETURN** this form to this address.

FORM FDA 356h (4/97) Computer generated by Nycomed Inc.

3 Pages have been Withheld in Full as b4 (CCI/TS) immediately following this page

NDA SUPP AMEND
C

Nycomed Amersham

Nycomed Amersham Imaging
466 Devon Park Drive
P.O. Box 6630
Wayne, PA 19087-8630
610 225 4000

April 19, 1999

ORIGINAL

Eldon Leutzinger, Ph.D.
Chemistry Team Leader
Division of Medical Imaging and
Radiopharmaceutical Drug Products [HFD-160]
DMDC II, Office of New Drug Chemistry
5600 Fishers Lane
Rockville, MD 20857

APR 21 1999
HFD-160
EVALUATION AND RESEARCH

Re: NDA 19-044/S-016
Indium In-111 Oxine

Dear Dr. Leutzinger,

Please refer to our Application, identified above. Please also refer to your letter of April 7, 1999, received by Medi-Physics on April 13, 1999, concerning Supplement S-016 for the (b) (4) for the in-process specification for (b) (4) impurity.

Medi-Physics intends to file an amendment to the supplemental application in order to respond to the Division's questions.

Should you have any questions, please contact me at (610) 225-4107. Thank you for your continued interest in our Application.

Yours Truly,

Susan K. Olinger
Director, Drug Regulatory Affairs

REVIEWS COMPLETED
CSO ACTION: LETTER E-MAIL MEMO
CSO INITIALS 4/22/99 DATE

DEPARTMENT OF HEALTH AND HUMAN SERVICES
FOOD AND DRUG ADMINISTRATION

APPLICATION TO MARKET A NEW DRUG, BIOLOGIC, OR AN ANTIBIOTIC DRUG FOR HUMAN USE

(Title 21, Code of Federal Regulations, 314 & 601)

Form Approved: OMB No. 0910-0338
Expiration Date: April 30, 2000
See OMB Statement on last page

FOR FDA USE ONLY

APPLICATION NUMBER

NDA 19-044

APPLICATION INFORMATION

NAME OF APPLICANT	DATE OF SUBMISSION
Medi-Physics, Inc.	April 19, 1999
TELEPHONE NO. *(Include Area Code)*	**FACSIMILE (FAX) Number** *(Include Area Code)*
(610) 225-4107	(610) 225-4407

APPLICANT ADDRESS *(Number, Street, City, State, County, ZIP Code or Mail Code and U.S. License number if previously issued):*	AUTHORIZED U.S. AGENT NAME & ADDRESS *(Number, Street, City, State, ZIP Code telephone & FAX number)* IF APPLICABLE
466 Devon Park Drive P.O. Box 6630 Wayne, PA 19087-8630	

PRODUCT DESCRIPTION

NEW DRUG OR ANTIBIOTIC APPLICATION NUMBER, OR BIOLOGICS LICENSE APPLICATION NUMBER (If previously issued)

ESTABLISHED NAME *(e.g., Proper name, USP/USAN name)*	PROPRIETARY NAME *(trade name)* IF ANY
Indium In-111 Oxyquinoline Solution	Indium Oxine

CHEMICAL/BIOLOGICAL/BLOOD PRODUCT NAME (*If any*)	CODE NAME (*If any*)
NA	

DOSAGE FORM:	STRENGTHS:	ROUTE OF ADMINISTRATION:
Solution	1 mCi/mL	IV

(PROPOSED) INDICATION(S) FOR USE:
Radiolabeling of autologous leukocytes.

APPLICATION INFORMATION

APPLICATION TYPE
(check one) ■ NEW DRUG APPLICATION (21 CFR 314.50) ☐ ABBREVIATED APPLICATION (ANDA, AADA, 21 CFR 314.94)
☐ BIOLOGICS LICENSE APPLICATION (21 CFR part 601)

IF AN NDA, IDENTIFY THE APPROPRIATE TYPE ■ 505 (b) (1) ☐ 505 (b) (2) ☐ 507

IF AN ANDA, OR AADA, IDENTIFY THE REFERENCE LISTED DRUG PRODUCT THAT IS THE BASIS FOR THE SUBMISSION
Name of Drug — Holder of Approved Application

TYPE OF SUBMISSION
(check one) ☐ ORIGINAL APPLICATION ☐ AMENDMENT TO A PENDING APPLICATION ☐ RESUBMISSION
☐ PRESUBMISSION ☐ ANNUAL REPORT ☐ ESTABLISHMENT DESCRIPTION SUPPLEMENT ☐ SUPAC SUPPLEMENT
☐ EFFICACY SUPPLEMENT ☐ LABELING SUPPLEMENT ☐ CHEMISTRY MANUFACTURING AND CONTROLS SUPPLEMENT ■ OTHER

REASON FOR SUBMISSION
To keep the final drug product release specification of NMT 0.1% for the drug product

PROPOSED MARKETING STATUS (check one) ■ PRESCRIPTION PRODUCT (Rx) ☐ OVER THE COUNTER PRODUCT (OTC)

NUMBER OF VOLUMES SUBMITTED 1 — THIS APPLICATION IS ■ PAPER ☐ PAPER AND ELECTRONIC ☐ ELECTRONIC

ESTABLISHMENT INFORMATION

Provide locations of all manufacturing, packaging and control sites for drug substance and drug product (continuation sheets may be used if necessary). Include name, address, contact, telephone number, registration number (CFN), DMF number, and manufacturing steps and/or type of testing (e.g. Final dosage form, Stability testing) conducted at the site. Please indicate whether the site is ready for inspection or, if not, when it will be ready.

Amersham Laboratories
Amersham, UK

Cross References (list related License Applications, INDs, NDAs, PMAs, 510(k)s, IDEs, BMFs, and DMFs referenced in the current application)

NDA 19-044

This application contains the following items: *(Check all that apply)*	
	1. Index
	2. Labeling (check one) ☐ Draft labeling ☐ Final Printed Labeling
	3. Summary (21 CFR 314.50 (c))
	4. Chemistry Section
	A. Chemistry, manufacturing, and controls information (e.g. 21 CFR 314.50 (d) (1), 21 CFR 601.2)
	B. Samples (21 CFR 314.50 (e) (1), 21 CFR 601.2 (a)) (Submit only upon FDA's request)
	C. Methods validation package (e.g. 21 CFR 314.50 (e) (2) (i), 21 CFR 601.2)
	5. Nonclinical pharmacology and toxicology section (e.g. 21 CFR 314.50 (d) (2), 21 CFR 601.2)
	6. Human pharmacokinetics and bioavailability section (e.g. 21 CFR 314.50 (d) (3), 21 CFR 601.2)
	7. Clinical Microbiology (e.g. 21 CFR 314.50 (d) (4))
	8. Clinical data section (e.g. 21 CFR 314.50 (d) (5), 21 CFR 601.2)
	9. Safety update report (e.g. 21 CFR 314.50 (d) (5) (vi) (b), 21 CFR 601.2)
	10. Statistical section (e.g. 21 CFR 314.50 (d) (6), 21 CFR 601.2)
	11. Case report tabulations (e.g. 21 CFR 314.50 (f) (1), 21 CFR 601.2)
	12. Case reports forms (e.g. 21 CFR 314.50 (f) (2), 21 CFR 601.2)
	13. Patent information on any patent which claims the drug (21 U.S.C. 355 (b) or (c))
	14. A patent certification with respect to any patent which claims the drug (21 U.S.C 355 (b) (2) or (j) (2) (A))
	15. Establishment description (21 CFR Part 600, if applicable)
	16. Debarment certification (FD & C Act 306 (k)(1))
	17. Field copy certification (21 CFR 314.5 (k) (3))
	18. User Fee Cover Sheet (Form FDA 3397)
x	19. OTHER (Specify) General Correspondence

CERTIFICATION

I agree to update this application with new safety information about the product that may reasonably affect the statement of contraindications, warnings, precautions, or adverse reactions in the draft labeling. I agree to submit safety update reports as provided for by regulation or as requested by FDA. If this application is approved, I agree to comply with all applicable laws and regulations that apply to approved applications, including, but not limited to the following:

1. Good manufacturing practice regulations in 21 CFR 210 and 211, 606, and/or 820.
2. Biological establishment standards in 21 CFR Part 600.
3. Labeling regulations in 21 CFR 201, 606, 610, 660 and/or 809.
4. In the case of a prescription drug or biological product, prescription drug advertising regulations in 21 CFR 202.
5. Regulations on making changes in application in 21 CFR 314.70, 314.71, 314.72, 314.97, 314.99. and 601.12.
6. Regulations on reports in 21 CFR 314.80, 314.81, 600.80 and 600.81.
7. Local, state and Federal environmental impact laws.

If this application applies to a drug product that FDA has proposed for scheduling under the Controlled Substances Act I agree not to market the product until the Drug Enforcement Administration makes a final scheduling decision.

The data and information in this submission have been reviewed and to the best of my knowledge are certified to be true and accurate.

Warning: a willfully false statement is a criminal offense, U.S. Code, title 18, section 1001.

SIGNATURE OF RESPONSIBLE OFFICIAL OR AGENT	TYPED NAME AND TITLE	DATE
Susan K. Olinger	Susan K.Olinger, Director, QARA	April 19, 1999

ADDRESS (*Street, City, State, and ZIP CODE*)	Telephone Number
466 Devon Park Drive P.O. Box 6630 Wayne, PA 19087-8630	(610) 225-4107

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DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

Food and Drug Administration
Rockville MD 20857

NDA 19-044/S-016 MAR - 5 1999

Medi-Physics, Inc.
c/o Nycomed Amersham
466 Devon Park Drive
Wayne, PA 19087-8630

Attention: Susan K. Olinger
Director, Drug Regulatory Affairs

Dear Ms. Olinger:

We acknowledge receipt of your supplemental application for the following:

Name of Drug: Indium IN-111 Oxine Solution

NDA Number: 19-044

Supplement Number: S-016

Date of Supplement: February 1. 1999

Date of Receipt: February 9, 1999

Unless we find the application not acceptable for filing, this application will be filed under Section 505(b)(1) of the Act on April 10, 1999 in accordance with 21 CFR 314.101(a).

All communications concerning this NDA should be addressed as follows:

Center for Drug Evaluation and Research
Division of Medical Imaging and Radiopharmaceutical
Drug Products, HFD-160
Office of Drug Evaluation III
Attention: Document Control Room 18B-06
5600 Fishers Lane
Rockville, MD 20857

Sincerely,

Robert K. Leedham 3/4/99

Robert K. Leedham, Jr.
Supervisory Consumer Safety Officer
Division of Medical Imaging and Radiopharmaceutical
Drug Products, HFD-160
Office of Drug Evaluation III
Center for Drug Evaluation and Research

cc:
Original NDA 19-044/S-016
HFD-160/Div. Files
HFD-160/CSO/R. K. Leedham, Jr.

SUPPLEMENT ACKNOWLEDGEMENT