

[¹¹C]NNC 112 FOR INJECTION: CHEMISTRY, MANUFACTURING AND CONTROLS

PET Radiopharmaceutical Sciences Section,
Molecular Imaging Branch,
National Institute of Mental Health,
National Institutes of Health,
Bldg. 10, Rm. B3 C338,
Bethesda, MD 20892

Date of review: 06/03/04

1. DRUG PRODUCT COMPONENTS AND QUANTITATIVE COMPOSITION

Component	Composition/batch
Drug Substance¹ [¹¹ C]NNC 112	20 to 200 mCi at EOS ²
Other ingredient(s) 0.9% Sodium Chloride Injection, USP NNC 112	10 mL

¹Throughout this application [¹¹C]NNC 112 refers to the drug substance and [¹¹C]NNC 112 for Injection to the final product

²EOS = End of synthesis calibration time.

2. CONTROLS FOR COMPONENTS / RAW MATERIALS

A. *Organic substrate (Key Intermediate)*

1.	Name of component	Desmethyl-NNC 112 ((+)-5-benzofuran-4-yl-8-chloro-2,3,4,5-tetrahydro-1H-benzo[d]azepin-7-ol)
2.	Name and address of supplier	Karolinska Institute. Dept. of Clinical Neuroscience, Psychiatry Section, Karolinska Hospital, Stockholm, Sweden.
3.	Certificate of analysis (COA)	HPLC chromatogram, NMR, and LC-MS chromatogram are provided. See Document 9.
4.	Storage conditions	1. Container/Closure 4 mL screw cap vial housed in a plastic canister 2. Stored at 4°C 3. The material is stable for 2 years, when stored in above container/closure under described storage conditions.

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B. Target Starting Material

All [¹¹C]carbon dioxide is produced at the NIH Cyclotron Facility.

The following target material will be used for the production of short-lived radioactive [¹¹C]carbon dioxide

1	Name of the target material	Nitrogen gas with about 1% oxygen
2	Name and address of the target material manufacturer	Matheson Gas 932 Paterson Plank Road East Rutherford, NJ 07073
3	Identity test performed to release each lot for production use	COA
4	COA	A representative copy of supplier's COA is provided in COA Attachment Section
5	Target material recycling criteria	N/A

C. Reagents, Solvents, Gases, Purification Columns, etc

	Name	Name and address of the supplier	Quality grade (e.g., ACS, USP, etc.), representative COA and acceptance criteria
1	Acetonitrile, HPLC Grade	Burdick & Jackson 1953 South Harvey Street Muskegon, MI 49442	COA Document 8.
2	Water, HPLC Grade	EMD Chemicals Inc. 480 S. Democrat Rd. Gibbstown, NJ 00827	COA Document 8.
3	<i>N,N</i> -Dimethylformamide	Aldrich Chemical Company 1001 West St. Paul Ave, Milwaukee, WI 53233	COA Document 8.

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4	Beckman C-18 Ultrasphere 5 µm (10 x 250mm)	Beckman 4300 N. Harbor Blvd. Fullerton, CA 92834	COA Document 8.
5	Absolute ethanol (200 proof ; USP)	Warner-Graham Co. P.O. Box 249, 160 Church Lane Cockeysville, MD 21030	USP
6	Sterile filter (MP; 25mm; 0.22 µm; Millex)	Millipore 80 Ashby Road Bedford MA 01730	COA Document 8.
7	Sterile filter (GV; 4 mm; 0.22 µm vent type; Millex)	Millipore 80 Ashby Road Bedford MA 01730	COA Document 8.
8	Sterile vial, 10 mL	Abbott Laboratories Inc. 200 Abbott Park Rd. Abbott, IL 60064	COA Document 8.

3. REFERENCE STANDARDS

The following reference standards are used in the quality control methods of [¹¹C]NNC 112 for injection:

Name of reference standard		Name and address of the supplier	Representative COA and acceptance criteria
1	NNC 112	Karolinska Institute, Dept. of Clinical Neuroscience, Psychiatry Section, Karolinska Hospital, Stockholm, Sweden.	¹ H-NMR spectrum, LC-MS, HPLC chromatogram. See Document 9: Acceptance Testing and Forms

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2	Desmethyl-NNC 112	Karolinska Institutet, Dept. of Clinical Neuroscience, Psychiatry Section, Karolinska Hospital, Stockholm, Sweden.	¹ H-NMR spectrum, LC-MS, HPLC chromatogram. See Document 9: Acceptance Testing and Forms.
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4. MANUFACTURING AND TESTING FACILITIES

Facility address	Contact persons
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