

# [<sup>11</sup>C]MePPEP 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: 11/20/06

## 1. DRUG PRODUCT COMPONENTS AND QUANTITATIVE COMPOSITION

Component	Composition/batch
<b>Drug Substance<sup>1</sup></b> [ <sup>11</sup> C]MePPEP	20 to 250 mCi at EOS <sup>2</sup>
<b>Other ingredient(s)</b> 0.9% Sodium Chloride Injection, USP	10 mL
Polysorbate 80, NF	10 mg
Dehydrated Alcohol, Injection, USP	0.9 mL

<sup>1</sup>Throughout this application [<sup>11</sup>C]MePPEP refers to the drug substance and [<sup>11</sup>C]MePPEP for Injection to the final product

<sup>2</sup>EOS = End of synthesis calibration time.

## 2. CONTROLS FOR COMPONENTS / RAW MATERIALS

### A. *Organic substrate (Key Intermediate)*

1.	Name of component	Desmethyl MePPEP, (3 <i>R</i> ,5 <i>R</i> )-5-(3-hydroxyphenyl)-3-(( <i>R</i> )-1-phenylethylamino)-1-(4-trifluoromethyl-phenyl)-pyrrolidin-2-one
2.	Name and address of supplier	Pharma Core, care of Eli Lilly 4180 Mendenhall Oaks Parkway Suite 160 High Point, NC 27265-8033
3.	Certificate of analysis (COA)	See Document 7.
4.	Storage conditions	1. Container/Closure screw cap glass vial housed in a plastic canister 2. Stored at -20°C 3. The material is stable for at least 2 years, when stored in above container/closure under described storage conditions.

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## ***B. Target Starting Material***

All [<sup>11</sup>C]carbon dioxide is produced at the NIH Cyclotron Facility.

The following target material will be used for the production of short-lived radioactive [<sup>11</sup>C]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	Burdick & Jackson 1953 South Harvey Street Muskegon, MI 49442	HPLC Grade COA Document 7.6
2	Water	EMD Chemicals Inc. 480 S. Democrat Rd. Gibbstown, NJ 00827	HPLC Grade COA Document 7.17

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3	<i>N,N</i> -Dimethylformamide	Aldrich Chemical Company 1001 West St. Paul Ave, Milwaukee, WI 53233	COA Document 7.14
4	Phenomenex C-18 Luna, 10 µm (10 x 250mm)	Phenomenex 411 Madrid Ave. Torrance, CA 90501	COA Document 7.3
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 7.5
7	Sterile filter (GV; 4 mm; 0.22 µm vent type; Millex)	Millipore 80 Ashby Road Bedford MA 01730	COA Document 7.4
8	Sterile vial, 10 mL	Hospira, Inc. 275 North Field Drive Lake Forest IL 60045	COA Document 7.1
9	Tetrabutyl ammonium hydroxide, 1.0 M in methanol	Aldrich Chemical Company 1001 West St. Paul Ave, Milwaukee, WI 53233	COA Document 7.15
10	Polysorbate 80	Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg NJ 08865	N.F. COA Document 7.21
11	Dehydrated Alcohol, Injection	American Regent, Inc. One Luitpold Drive Shirley NY 11967	USP COA Document 7.22
12	0.9% Sodium Chloride, Injection	American Pharmaceutical Partners, Inc. 3159 Staley Road Grand Island, NY 14072	USP COA Document 7.12

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## 3. REFERENCE STANDARDS

The following reference standard is used in the quality control methods of [<sup>11</sup>C]MePPEP for Injection:

Name of reference standard		Name and address of the supplier	Representative COA and acceptance criteria
1	MePPEP, (3 <i>R</i> ,5 <i>R</i> )-5-(3-Methoxy-phenyl)-3-(( <i>R</i> )-1-phenylethylamino)-1-(4-trifluoromethyl-phenyl)-pyrrolidin-2-one	Pharma Core, care of Eli Lilly, 4180 Mendenhall Oaks Parkway Suite 160 High Point, NC 27265-8033	COA Document 7.23
2	Desmethyl MePPEP, (3 <i>R</i> ,5 <i>R</i> )-5-(3-hydroxy-phenyl)-3-(( <i>R</i> )-1-phenylethylamino)-1-(4-trifluoromethyl-phenyl)-pyrrolidin-2-one	Pharma Core, care of Eli Lilly, 4180 Mendenhall Oaks Parkway Suite 160 High Point, NC 27265-8033	COA Document 7.22

## 4. MANUFACTURING AND TESTING FACILITIES

Facility address	Contact persons
PET Radiopharmaceutical Sciences Section (PRSS), Molecular Imaging Branch (MIB), National Institute of Mental Health (NIMH), National Institutes of Health (NIH), Building 10, Room B3C338, 10 Center Drive, MSC 1003 Bethesda, MD 20892	Victor W. Pike, Ph.D., Chief, PET Radiopharmaceutical Sciences Section (PRSS) Phone: (301)-435-7847 Kelly Sprague, Radiochemist (PRSS) Cheryl Morse, Radiochemist (PRSS) Jinsoo Hong, Radiochemist (PRSS)