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Standard Operating Procedure

GEN-R009

QC Testing, Review, & "Final Release"

Approval Signatures:

Printed Name	Date	Signature	Date
Author:			
Supervisor:			
Regulatory Affairs/QA:			

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QC Testing, Review, and "Final Release"

1. **Purpose:** To describe the procedure for the final Quality Control (QC) testing, review of the final tests results, and release of the batch based on the final QC testing.

2. **Scope:** The processes outlined in this SOP for final Quality Control (QC) testing, review of the final tests results, and release of the batch, are conducted at the *manufacturing sites* synthesizing [^{18}F]FLT under the *Sponsor's* IND.

3. **Responsibilities:**
   3.1 *Manufacturing Sites*: To follow this procedure as written and to ensure that all results, control information, and raw data are documented as specified in dedicated Quality Control Laboratory Notebooks and recorded on the appropriate testing forms.

4. **References**
   4.1 USP 26 ‹821› Radioactivity
   4.2 USP 26 ‹823› Radiopharmaceuticals For Positron Emission Tomography—Compounding
   4.3 FDA Draft Guidance PET Drug Products—Current Good Manufacturing Practice (CGMP)—June 2002 (CDER)
   4.4 **GEN-Q111**, "Radiochemical Identification & Purity of 3'-Deoxy-3'-[^{18}F]fluorothymidine [^{18}F]FLT Injection by Radio-Thin Layer Chromatography Analysis"
   4.5 **GEN-Q112**, "Gas Chromatography Analysis of Residual Solvents"
   4.6 **GEN-Q113**, "Radionuclidic Identity by Half-Life Determination"
   4.7 **GEN-Q114**, "Bacterial Endotoxins by Limulus Amebocyte Lysate (LAL) Test"
   4.8 **GEN-Q115**, "pH Testing of Final Product"
   4.9 **GEN-Q117**, "Sterility Test"
   4.10 **GEN-Q118**, "A Color Spot Test for the Detection of Kryptofix® [2.2.2] in [^{18}F]FLT"
   4.11 **GEN-Q119**, "Chemical and Radiochemical Purity by HPLC"
   4.12 **GEN-Q110**, "Filter Integrity Test by Bubble Point"
   4.13 **GEN-M120**, "Documentation of Manufacturing Variances"
   4.14 **MPR-[^{18}F]FLT**, "Master Production Record for Synthesis of [^{18}F]FLT"
   4.15 **MBR-[^{18}F]FLT-L**, "Master Batch Record for Synthesis of [^{18}F]FLT"
   4.16 **GEN-Q015**, "Investigating Out of Specification QC Test Results"

5. **Forms**
   5.1 **Form MVR-001**, "Manufacturing Variance Report Form"
   5.2 **Form FQC-001**, "[^{18}F]FLT Final Product QC Test Results" Form I
   5.3 **Form FQC-002**, "Final Product QC Testing" Form II

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6. **Policies**
   - Always observe radiation safety rules.

7. **Materials and Equipment**
   - Refer to the specific QC Testing SOPs for the equipment and materials necessary.

8. **PROCEDURES**

8.1 Manufacture the [^{18}F] 3'-fluoro-3'-deoxythymidine as outlined in MPR-[^{18}F]FLT, Master Production Record for Synthesis of [^{18}F]FLT recording the control information in MBR-[^{18}F]FLT-L####.

8.2 Once the final filtration is complete, the activity measured, and the test samples collected as per the MPR-[^{18}F]FLT, begin the QC testing as per the following SOPs:

8.2.1 **GEN-Q111**, "Radiochemical Identification & Purity of 3'-Deoxy-3'-[^{18}F]fluorothymidine [^{18}F]FLT Injection by Radio-Thin Layer Chromatography Analysis"

8.2.2 **GEN-Q112**, "Gas Chromatography Analysis of Residual Solvents"

8.2.3 **GEN-Q113**, "Radionuclidic Identity by Half-Life Determination"

8.2.4 **GEN-Q114**, "Bacterial Endotoxins by Limulus Amebocyte Lysate (LAL) Test"

8.2.5 **GEN-Q115**, "pH Testing of Final Product"

8.2.6 **GEN-Q118**, "A Color Spot Test for the Detection of Kryptofix® [2.2.2] in [^{18}F]FLT"

8.2.7 **GEN-Q119**, "Chemical and Radiochemical Purity by HPLC"

8.3 Record the final test results on **Form FQC-001**, "[^{18}F]FLT Final Product QC Test Results" Form I. The analyst should record their test results as they are performing the tests. The analyst should also initial and date **Form FQC-001** as well.

8.4 A reviewer or supervisor initials and dates in the last column indicating his or her independent check of the test results.

8.5 Perform an integrity test of the final filter as per **GEN-Q110.** Record the results of this test in the **MBR-[^{18}F]FLT-L####.**

8.6 If the test results are not within the specifications, initiate an Out of Specification (OOS) Investigation as per **GEN-Q015**, "Investigating Out of Specification QC Test Results."

8.7 If the OOS cannot be resolved within a relatively short period of time (less than 2-3 hours) then the batch must be failed. Continue the investigation to determine the cause of the failure and determine the appropriate corrective action to prevent recurrence.

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8.8 If the test results are all within specifications, release the batch for further administration to human subjects.

8.9 Submit the sterility test sample and **Form FQC-002**, as per **GEN-Q117**, "Sterility Test" to the Clinical Hospital Laboratory after a background radiation level is achieved (usually within 24-48 hours).

8.10 Although the sterility test is performed retrospective to human administration, a negative result is required for the final product batch to meet its final acceptance criteria.

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REVISION HISTORY

Version Number	Description	Reason for Revision	Date	Author
V0	Original Record	Revised NCI-R009 Version January 28, 2005 to create this new SOP.	March 1, 2005	Teresa R. Zuber

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