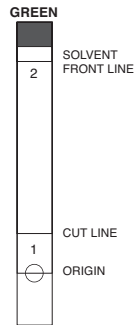


INTRODUCTION

This chromatography system is designed to determine the radiochemical purity of Fluorodeoxyglucose (F-18 FDG) using a single strip chromatography method.



Each green chromatography strip has three distinct lines: an origin line, a cut line and a solvent front line. For user convenience the back of each strip is marked with a soluble dye that will migrate with the solvent front. The technologist can easily see the solvent front via the movement of the dye. F-18 FDG migrates close to the solvent front while radiochemical impurities (F-18 Sodium Fluoride) remain

at the origin. Use a 10ml Wheaton Serum Vial as a developing vial.

This test requires the technologist to “spot” the radiopharmaceutical sample onto the chromatography strip.

NOTE: The Acetone HPLC grade solvent (Sigma-Aldrich Part #27972-5) required to complete this procedure must be purchased separately.

*Tec-Control Solvent Vendor:
Sigma-Aldrich Chemical Company
800-558-9160 / www.sigmaaldrich.com*

Customers outside the USA should visit the Sigma-Aldrich website to locate a regional office.

TEST PROCEDURE FOR DETERMINING THE RADIOCHEMICAL PURITY OF F-18 FDG

1. Add approximately 0.8 to 1.5 ml of acetone in a clean empty 10ml serum or scintillation vial.
2. Using a green chromatography strip, spot the radiopharmaceutical at the origin line using a 1 ml syringe with a 25G or 27G needle.
3. Immediately place the strip in acetone and allow the solvent to migrate to the solvent front line. This will take approximately 2 minutes.
4. Remove the strip and cut at the cut line into sections 1 and 2.
5. Using a gamma counter, count background and calculate the net counts by subtracting the background counts from the number of counts registered for each strip section.

NOTE: The strip should be placed on top or away from the well detector depending on count rate. If the strip is placed in the well, the dead time of the detector will give erroneous results.

CALCULATION

Radiochemical Purity of F-18 FDG (%)

$$= \left[\frac{(\text{NET CTS SECTION 2})}{(\text{NET CTS SECTION 1}) + (\text{NET CTS SECTION 2})} \right] \times 100$$

PREPARATION QUALITY

It is the decision of the nuclear medical clinician to determine the usability of the agent tested.

Authorized European Community Representative:

*Emergo Europe
Prinsessegracht 20
2514 AP, The Hague
The Netherlands*



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Biodex Medical Systems, Inc.

20 Ramsey Road, Shirley, New York, 11967-4704

Tel: 800-224-6339 (Int'l 631-924-9000),

Fax: 631-924-9241 Email: info@biodex.com, www.biodex.com

TEC-CONTROL™ CHROMATOGRAPHY STRIPS

For Fluorodeoxyglucose (F-18 FDG)
Radiochemical Purity

OPERATION MANUAL
150-127

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