

Materials List for:

Automated Radiochemical Synthesis of [¹⁸F]3F4AP: A Novel PET Tracer for Imaging Demyelinating Diseases

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Materials

Name	Company	Catalog Number	Comments
Cyclotron produced [¹⁸ F]fluoride	House supplied/Zevacor	IBA Cyclone 18	100-200 mCi
Integrated fluid processor for production FLT/FDG	ABX	K-2715SYN	Cassette used for nucleophilic substitution
Anhydrous acetonitrile	Janssen	36431-0010	Transfer under nitrogen
Methanol	Janssen	67-56-1	
ultrapure water	house supplied		Millipore MilliQ system
TBA-HCO ₃	ABX	808.0000.6	abx.de
QMA	Waters	WAT023525	Quaternary methyl ammonium: Anion exchange solid phase extraction cartridge for trap and release of ¹⁸ F ⁻ from the target water
Sodium bicarbonate	ABX	K-28XX.03	Prefilled 5 mL syringes
Alumina-N	Waters	WAT020510	Alumina-N solid phase extraction cartridge (for trapping unreacted ¹⁸ F ⁻)
3-fluoro-4-nitropyridine N-oxide	Synthonix	76954-0	Store in desiccator. Precursor
3-fluoro-4-aminopyridine	Sigma Aldrich	704490-1G	Reference standard
Oxalic acid	Sigma Aldrich	75688-50G	
Sodium phosphate monobasic	Fisher Scientific	S80191-1	
Triethyl amine	Fisher Scientific	04885-1	
Ethanol	Decon Labs	DSP-MD.43	USP
Final product vial	ABX	K28XX.04	
Millex Filter Syringe	Millex	SLGVR04NL	
10% Pd/C cartridge	Sigma Aldrich	THS-01111-12EA	
11 mm vials + crimp seals	Fisher Scientific	03-250-618, 06-451-117, or equivalent	
13 mm vials + crimp seals	Fisher Scientific	06-718-992, 06-718-643, or equivalent	
HPLC vials	Fisher Scientific	03-391-16, 03-391-17, or equivalent	
SEMIPREP C18 column	Agilent	990967-202	
V-vials	Alltech		
Syringes: 1, 3, 10 mL	Fisher Scientific	14-829-10D, 14-829-13Q, 14-829-18G, or equivalent	

Compressed gases: N ₂ , He, H ₂	Airgas	UHP N300, UHP HE300, UHP H300, or equivalent	
TLC plates	Sigma Aldrich	Z193275, or equivalent	
Name	Company	Catalog Number	Comments
Equipment			
Synthera automated synthesizer	IBA SA, Belgium, iba-worldwide.com	Synthera, 250.001	Automatic synthesis unit
In-house hydrogenator	See picture		See text description
Hot cells	Comecer		For manipulating radioactive materials
RadioTLC scanner	Eckert and Ziegler		For handling sterile materials
HPLC	Dionex	Ultimate 3000	
Dose calibrator	Capintec	CRC15	Or equivalent
Gamma counter	Capintec, 7 Vreeland Road, Florham Park, NJ 07932	CRC 15, PET-CRC25, or equivalent	For measuring radioactivity
Personal dosimeters	Packard	Cobra II	For measuring gamma spectrum
Personal radiation badges and rings	Atlantic Nuclear	Rados Rad-60 Electronic Dosimeter, or equivalent	
Rotavap + vacuum pump	Landauer		
Lead pigs + syringe shields	Heidolph		Or equivalent
Geiger counter	Pinestar		
Geiger counter	Ludlum	Model 3 + Pancake GM detector, 4801605, 47-1539, or equivalent	