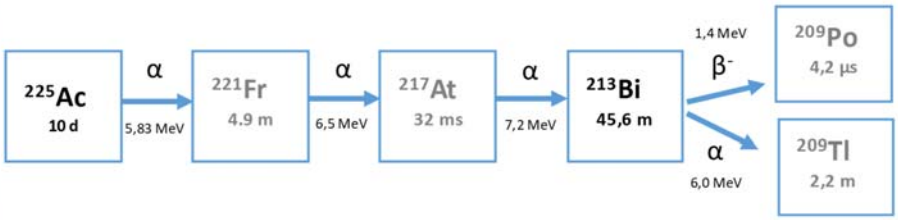
Nuclear Medicine & Healthcare Services
SOLUTION PARTNER IN NUCLEAR MEDICINE

OAK RIDGE National Laboratory

ISOTOPE ^{225}Ac (Actinium-225)

Physical Properties	
Production	^{223}U => ^{229}Th (Reactor Produced) Decay of thorium-229 Separated by ion exchange and solvent extraction
Half Life / Daughter	
Decay Mode	Multiple alpha and beta emissions to stable bismuth-209
Major Radiation	Alpha : 5.83 MeV Beta : 1.42 MeV
Form	Dried nitrate solid
Activity	Reactor Produced => 5.8 x 10^4 Ci/g (specific acitivity); carrier free *Accelerator Produced => 5.8 x 10^4 Ci/g at EOB, not carrier free (contains ^{227}Ac)*
Radiopurity	> 98% ^{225}Ac; <2% ^{225}Ra (Reactor produced) *≥ 98% ^{225}Ac; ~0,12% ^{227}Ac at EOB (Acc. produced)*
Dose Treatment (used with PSMA)	100 kBq/kg per cycle of 8 weeks Ref:1-2
Supply	ORNL, U.S. (Weekly, orders should be placed at least **2 weeks** in advance)
Contact	**EDH Nuclear Medicine & Healthcare Services Ltd. Co.** **Tel** : 0216 912 20 51 **e-mail** : info@edhmed.om

References for Targeting Dose

1. Targeted α-Therapy of Metastatic Castration-Resistant Prostate Cancer with ^{225}Ac-PSMA-617: Dosimetry Estimate and Empiric Dose Finding.

Kratochwil C[1], Bruchertseifer F[2], Rathke H[3], Bronzel M[4], Apostolidis C[2], Weichert W[5], Haberkorn U[3,6], Giesel FL[3], Morgenstern A[2]

J Nucl Med. 2017 Oct;58(10):1624-1631. doi: 10.2967/jnumed.117.191395. Epub 2017 Apr 13.

2. TAT-10: Ac225-PSMA-617: PSMA Targeting Alpha-Radiation Therapy of Patients with mCRPC

Written By: William Carithers, Lawrence Berkeley National Laboratory

10th International Symposium on Targeted Alpha Therapy (TAT-10) May 31 - June 1, 2017 - Kanazawa, Japan