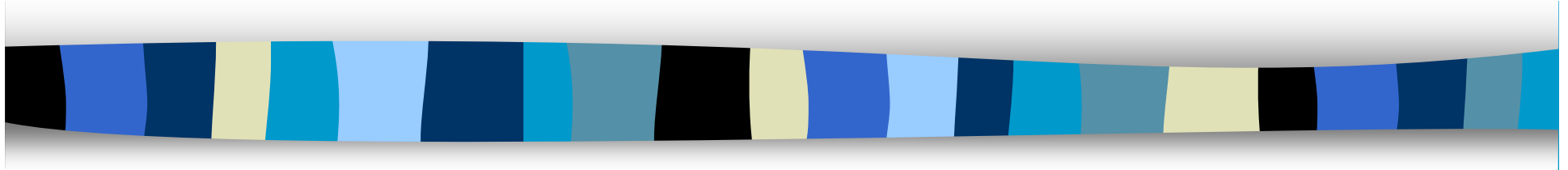
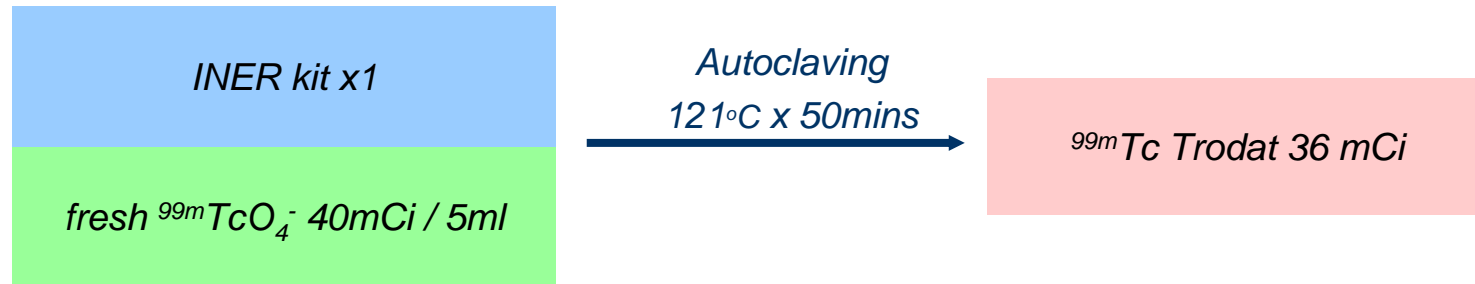


Tc-99m TRODAT-1 Brain SPECT



Chin Hu

Radiopharmaceutical Preparation



1. Kit shelf life : 6 mo, 2-8°C
2. ^{99m}TcO₄⁻ : <44 mCi, elution <6 hrs, generator <24 hrs
3. Mixture autoclaving : 30 mins
4. ^{99m}Tc Trodat : <4 hrs, room temp
5. Radiochemical purity > 90% (thin-layer chromatography)
6. Neutral solution (pH 7.0-7.5)
7. Dose : 22-28 mCi, 70kg
8. Side effect : dizzy, backache, hypertension, paresthesia
9. Contraindication : pregnancy, breast feeding

Scan Protocol

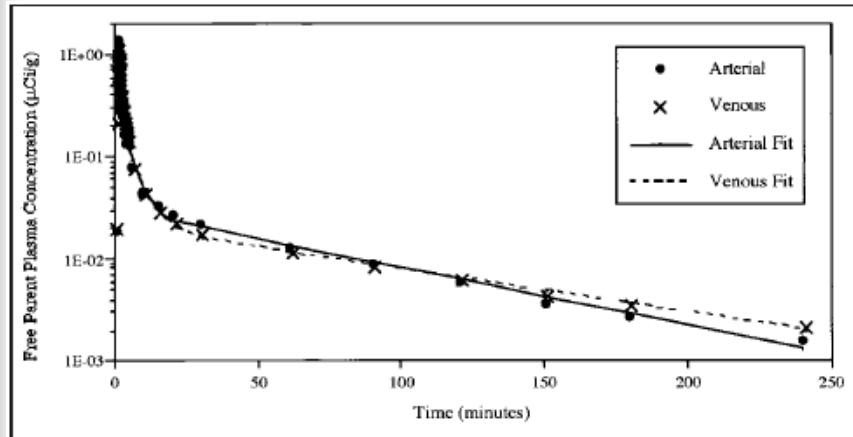
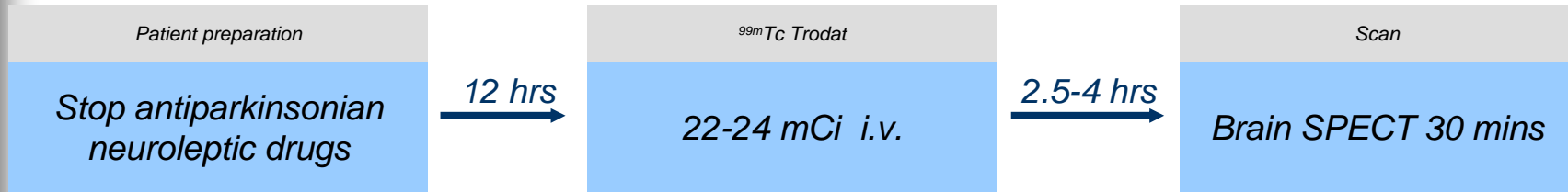


FIGURE 2. Clearance of free parent [^{99m}Tc]-TRODAT-1 from plasma was examined in both arterial and venous blood. Representative arterial and venous curves were fit to sum of four exponentials.

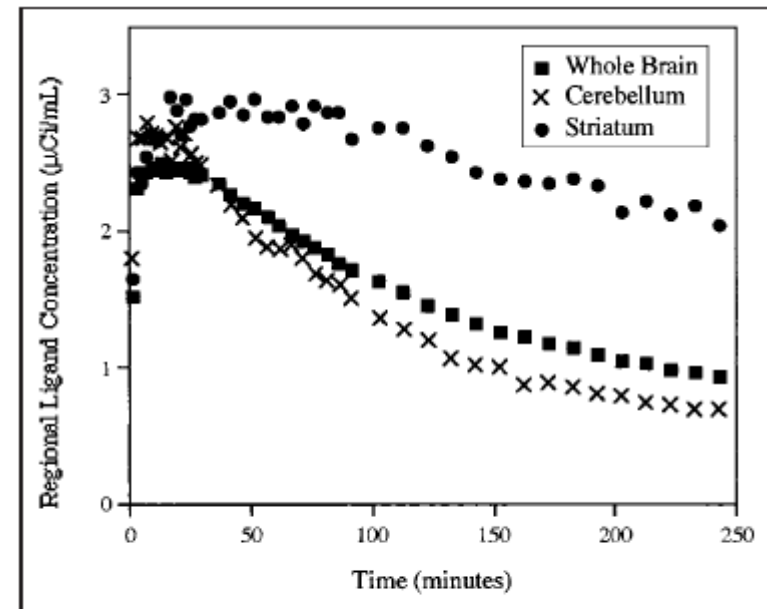


FIGURE 5. Regional time-activity curves acquired with SPECT in baboon for 4 h postinjection of 16.8 mCi [^{99m}Tc]TRODAT-1. Activity in striatum peaked at 30–40 min. Maximum target/background ratios were observed at 4 h.



Image Acquisition

- 1. Brain SPECT, head holder*
- 2. Dual head r-camera*
- 3. Fanbeam collimator, zoom 1.4, 128x128 matrix*
- 4. Energy : 140 KeV \pm 15%*
- 5. Circular at 3 intervals, 25 sec per angle (30-60 sec)*
- 6. Total 30 mins*

Image Reconstruction

1. Filtered back-projection
2. Metz filter : cutoff = 0.5, power = 10
3. Chang's first order attenuation correction : coefficient=0.12, manual
4. Pixel size = , slice thickness =
5. Display : raw 10 spectrum, parathyroid scale

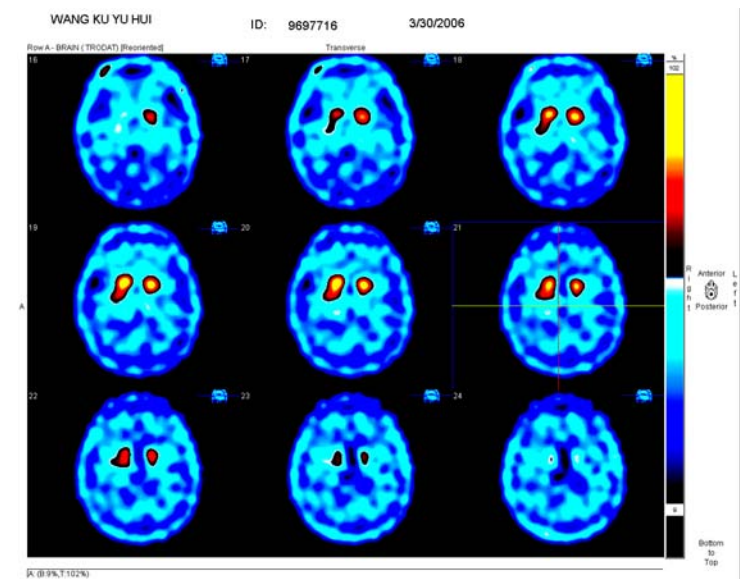
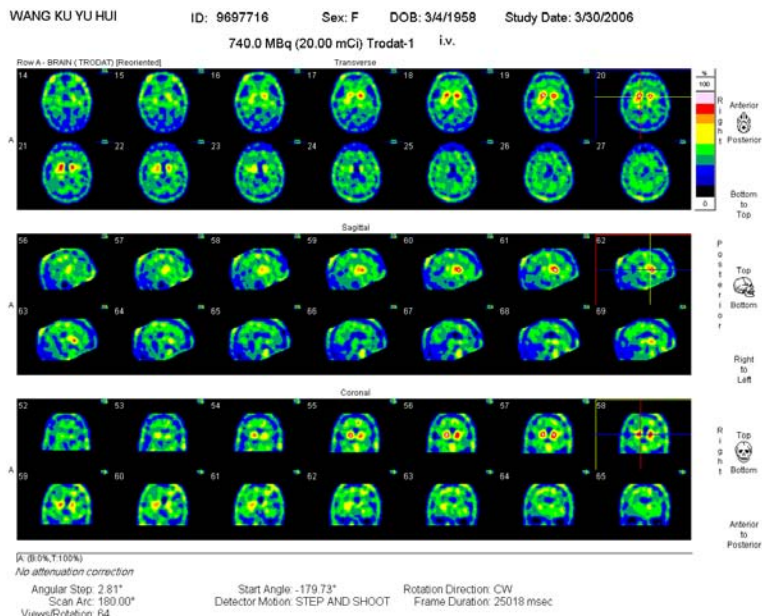
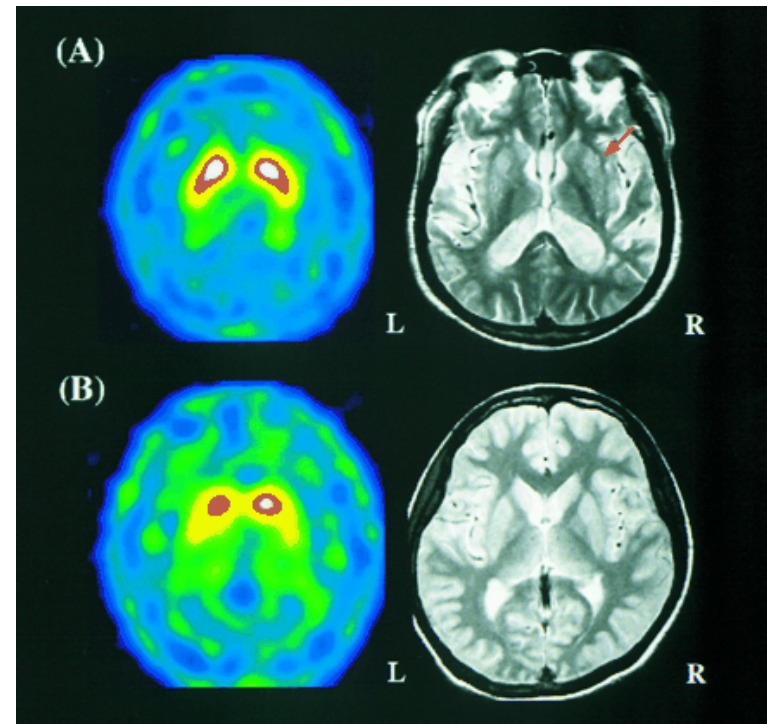
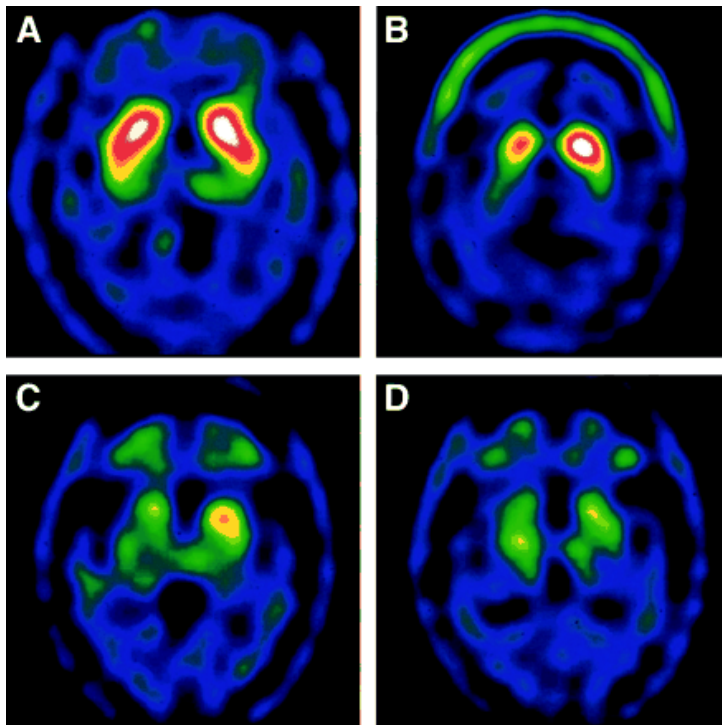


Image Interpretation

1. Visual score : 0-4

2. ROI analysis : specific uptake ratios (SURs), MRI registration



Hoehn and Yahr Staging (HYS)

Hoehn and Yahr Staging of Parkinson's Disease

- 1. Stage One**
 - Signs and symptoms on one side only
 - Symptoms mild
 - Symptoms inconvenient but not disabling
 - Usually presents with tremor of one limb
 - Friends have noticed changes in posture, locomotion and facial expression
- 2. Stage Two**
 - Symptoms are bilateral
 - Minimal disability
 - Posture and gait affected
- 3. Stage Three**
 - Significant slowing of body movements
 - Early impairment of equilibrium on walking or standing
 - Generalized dysfunction that is moderately severe
- 4. Stage Four**
 - Severe symptoms
 - Can still walk to a limited extent
 - Rigidity and bradykinesia
 - No longer able to live alone
 - Tremor may be less than earlier stages
- 5. Stage Five**
 - Cachectic stage
 - Invalidism complete
 - Cannot stand or walk
 - Requires constant nursing care

