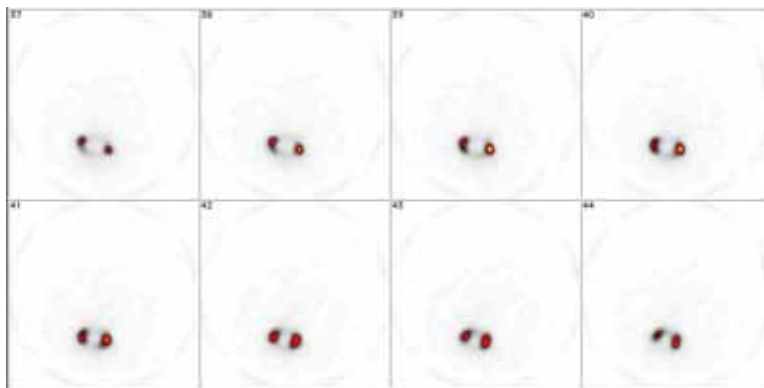
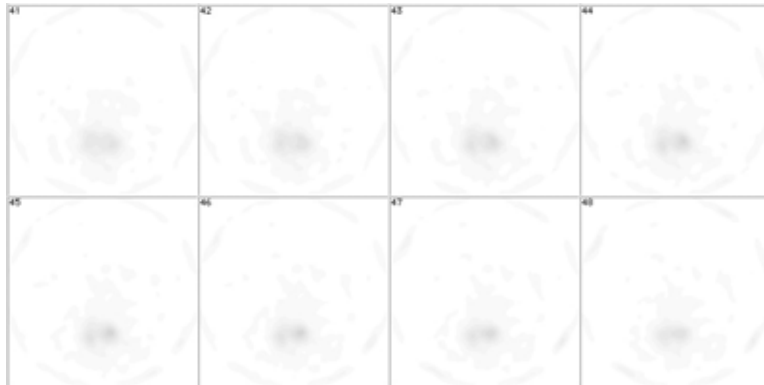
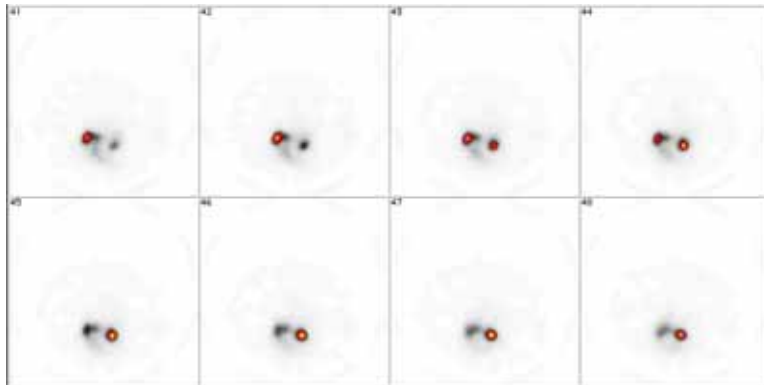


Blocking of Dopamine Transporters with Vanoxerine

Protocol

A 340 g rat was initially given an intravenous injection of 1.7 mg (5 mg/kg) Vanoxerine (GBR 12909), a known dopamine transporter blocker. 15 minutes later a 0.9 ml injection of 15 MBq of ^{125}I β -CIT was administered (β -CIT binds to *both* dopamine and serotonin transporters). Then, 45 m from the original IV injection, another 1.7 mg of Vanoxerine was administered subcutaneously.



Images

The first scan, shown at the left, was taken at 3 hours following the original injection. The striata have taken up the ^{125}I and the high resolution of the MollyQTM is demonstrated. The slice spacing of 400 microns shows the excellent axial resolution as well.

The second scan was made about 2½ hours later and shows very little retention of ^{125}I .

The last scan at the bottom is of another rat using the same protocol and taken with the same delay as the second image — but *without* administration of Vanoxerine.

Discussion

The striata are known to involve both serotonin and dopamine neurotransmitters. Since the Vanoxerine is blocking dopamine transporters, we assume that the first image is showing only serotonin transporter uptake.

This is verified by the second image taken after sufficient time has elapsed for the tagged serotonin transporters to be washed out.

In contrast, the third image shows persistent tagged dopamine transporters not blocked by Vanoxerine.

The data for these studies were kindly provided by Dr Deborah Dewar, Senior Lecturer in Clinical Neuroscience, University of Glasgow.