

## 《Invited Special Lecture》

## SPET and PET in Psychiatry

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The radioactive tracer method is ideally tailored to investigate biological functions in man. With its unique sensitivity, often at the picomolar level, it enables *in vivo* signalling systems to be detected and indeed visualized. Modern apparatus (SPET and PET tomographs) provide for the required 3D information. An impressive array of radioligands have been developed and continue to be developed which allow for the *in vivo* demonstration of an increasing number of important neuroreceptor systems.

Since these tracers and receptor systems carry unique information, the applications for nuclear medicine are exciting and unique. No other imaging technology can compete in this field. The field of drug discovery is significantly benefitting from these developments and relevant groups are taking an increased interest in the field. In parallel, slowly but surely, a clinical body of knowledge is emerging which points to a few specific areas of clinical applications.

PET and SPET ligands will be discussed in order to expand the above concepts and to illustrate the areas of interest and applications. It will be seen that these two technologies complement each other whilst SPET technology is actually leading in the area of clinical indications. Significant advantages can be obtained from longer lived tracers when the time required to reach equilibrium for *in vivo* imaging is measured in hours rather than in minutes.

It is clear that this field of nuclear medicine represents an area of growth and that significant new knowledge is being gained. Not only is this new information able to guide drug discovery but it is also able to guide clinicians in the management of a variety of patient related problems.