

PET/SPECT AGENTS FOR APPLICATIONS IN BIOMEDICAL IMAGING

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Background

Coronary heart disease is the primary cause of death in the United States. Though myocardial perfusion imaging in hospitals has mostly involved the use of ^{99m}Tc -Sestamibi and similar agents for diagnosing heart disease, there is an increased desire for PET perfusion agents. The global interest in radiopharmaceuticals containing gallium-68 is growing because this PET radionuclide can be produced from non-cyclotron sources. An additional benefit is that the overall exposure to radiation is lower because Ga-68 has a shorter half life than ^{99m}Tc .

Technology Summary

Washington University investigators have developed a Ga-68 based radiopharmaceutical for PET myocardial perfusion imaging. This novel agent can also be labeled with Ga-67 for SPECT myocardial perfusion imaging. Both Ga-labeled agents have the ability to “paint” the heart within five minutes of injection. Data from the lab demonstrates that in comparison to other tracers, the Ga-labeled agents have an enhanced uptake into the heart, decreased liver retention, and increased clearance from non-cardiac and adjoining tissues. These characteristics of the agents increase the imaging sensitivity and decrease the background signal from other organs.

Patents

Granted - US [9,579,408](#)