Docket #: S09-209

A Novel Synthesis of 2'-Deoxy-2'-[18F]fluoro-9-β-D-arabino-furanosylguanine ([18F]F-AraG) and associated compounds, and its use for Imaging T Cell Activation with PET

Stanford researchers have developed a novel PET agent for diseases stemming from T cell origin. The probes help visualize the disease status as well as the progress of therapy. 2-Deoxy-9-β-D-arabino-furanosylguanine (AraG) is a guanosine analog with proven efficacy in the treatment of T cell lymphoblastic disease, such as leukemia. The derivative 2-deoxy-2-fluoro-9-β-D-arabino-furanosylguanine (F-AraG) is known to exhibit selective T-cell toxicity. It is metabolized in a unique fashion by deoxyguanosine kinase and incorporated into mitochondrial DNA. The researchers have developed a novel way to synthesize [18F]F-AraG which can be used as a new PET imaging agent for the specific detection of disease of T cell origin. The synthesis method developed here can be used with other PET probes.

Applications

- PET Imaging

Advantages

- Reduced Costs
- Faster 2-step synthesis method
- Use for blood-related diseases, such as leukemia

Publications

- U.S. Patent Application No. 12/875,339

Patents

- Published Application: 20110059014
- Published Application: 20150118157
- Published Application: 20210187133
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