

21ST CENTURY OPPORTUNITIES TO ENHANCE THE SUPPLY AND APPLICATIONS OF MEDICAL ISOTOPES

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Research in extending medical isotopes for the diagnosis and treatment of numerous health maladies is hampered by outages and upsets in major supply sources. Investigations in cures for brain cancer (^{211}At), HIV/AIDS virus (^{213}Bi), and even bacterial vectors are either in reduced progress mode or have been cancelled until isotopes become available. Examples of several key radioactive medical isotopes include $^{99\text{m}}\text{Tc}$ for diagnostics, ^{131}I for non-Hodgkin's Lymphoma and thyroid cancer, Actinium-225 for acute myelogenous leukemia, and ^{67}Cu for lymphoma cancer. Possibilities for developing commercially viable sources using compact accelerators and next generation research and production reactors are discussed.