

Sn-117m Labeled Annexin for Vulnerable Plaque

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Vulnerable plaque is responsible for over 60% of heart related deaths. Unlike normal plaque, it cannot be diagnosed by any technique including measuring the thickness of blood vessels. In this paper we report the synthesis and evaluation of high specific activity [Sn-117m]-DOTA-Annexin for the detection and potential treatment of vulnerable plaque. High specific activity Sn-117m was chelated to a bifunctional chelating agent and then purified using HPLC. Attachment of the chelate to annexin was accomplished by preparing the isothiocyanate version of the chelate and then reacting it with lysine residues on the annexin. Several analytical methods (cell binding, electrophoresis, gel permeation chromatography) were used to show that high purity [Sn-117m]-DOTA-annexin was produced that gave positive results in animal models. Human clinical trials are underway. In addition this paper will describe related work in the initial synthesis and evaluation of high specific Sn-117m chelated to DTPA and to a monoclonal antibody.