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(54) Title: ISOTOPE PREPARATION METHOD

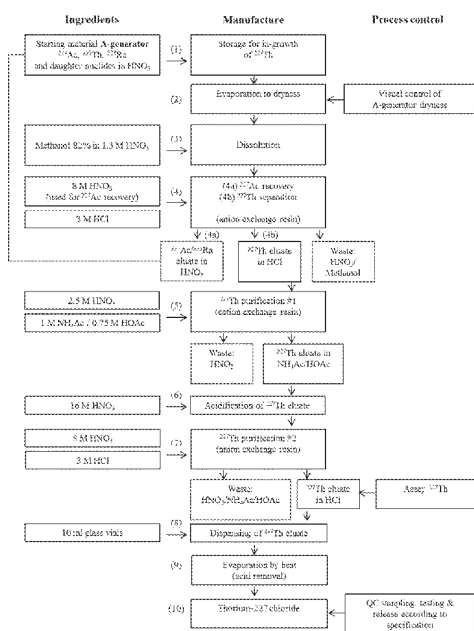


Figure 1 - Manufacturing process and process control

(57) Abstract: The present invention comprises a method for the generation of ^{227}Th of pharmaceutically tolerable purity comprising i) preparing a generator mixture comprising ^{227}Ac , ^{227}Th and ^{223}Ra ; ii) loading said generator mixture onto a strong base anion exchange resin; iii) eluting a mixture of said ^{223}Ra and ^{227}Ac from said strong base anion exchange resin using a first mineral acid in an aqueous solution; iv) eluting ^{227}Th from said strong base anion exchange resin using a second mineral acid in an aqueous solution whereby to generate a first ^{227}Th solution containing contaminant ^{223}Ra and ^{227}Ac ; v) loading the first ^{227}Th solution onto a strong acid cation exchange resin; vi) eluting at least a part of the contaminant ^{223}Ra and ^{227}Ac from said strong acid cation exchange resin using a third mineral acid in an aqueous solution; and vii) eluting the ^{227}Th from said strong acid cation exchange resin using a first aqueous buffer solution to provide a second ^{227}Th solution. Purified thorium-227 of pharmaceutical purity and a pharmaceutical composition comprising the same are also provided.



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