CLAIMS

1. Radium-224 atoms for use in treatment of a pancreatic cancer tumor of a patient, wherein

the radium-224 atoms are to be implanted in the pancreatic cancer tumor, coupled to supports having a length of at least 1 millimeter, such that upon decay, at least 5% of daughter radionuclides of the radium-224 atoms leave the support;

characterized in that

the radium-224 atoms on the supports have a radon release rate of between 1.2 and 2.5 microcurie per centimeter length.

2. The radium-224 atoms of claim 1, wherein the administration pattern of the radium-224 atoms comprises implanting the radium-224 atom on the supports in the pancreatic cancer tumor throughout the tumor, with a spacing between the supports of between 3 and 4.5 millimeters, and

3. The radium-224 atoms of claim 2, wherein the administration pattern of the radium-224 atoms comprises implanting the radium-224 atom on the supports in the pancreatic cancer tumor throughout the tumor, with a spacing between the supports of between 3.1 and 3.9 millimeters.

4. The radium-224 atoms of claims 1-3, wherein the radium-224 atoms on the supports have a radon release rate of between 1.2 and 1.85 microcurie per centimeter length.

5. The radium-224 atoms of claims 1-3, wherein the radium-224 atoms on the supports have a radon release rate of at least 1.7 microcurie per centimeter length.

6. The radium-224 atoms of claims 1-3, wherein the radium-224 atoms on the supports have a radon release rate of between 2.1 and 2.5 microcurie per centimeter length.

7. The radium-224 atoms of any of claims 1-6, wherein the administration pattern of the radium-224 atoms comprises implanting the radium-224 atom on the supports in the pancreatic cancer tumor throughout the tumor, in a hexagonal arrangement, each support separated from its neighboring supports in the array by not more than 4 millimeters.

8. A method of preparing a radiotherapy treatment, comprising:

identifying a tumor as a pancreatic cancer tumor;

receiving input on the pancreatic cancer tumor; and

providing one or more of:

a layout of diffusing alpha-emitter radiation therapy (DaRT) sources for the pancreatic cancer tumor, and

a kit including a determined number of radiotherapy sources required for the pancreatic cancer tumor,

wherein the sources have a radon release rate of between 1.2 and 2.5 microcurie per centimeter length.

9. The method of claim 8, wherein receiving input on the pancreatic cancer tumor comprises receiving an image of the tumor.

10. The method of claim 9, wherein providing the layout comprises providing a layout in which a spacing between sources in the tumor is 4 millimeters or less.

11. The method of claim 8, further comprising determining a number of sources required such that the area of the tumor is covered by sources with a spacing between the sources which is not greater than 4 millimeters.

12. The method of claim 8, further comprising determining a number of sources required such that the area of the tumor is covered by sources with a spacing between the sources of between 3.1-3.9 millimeters.

13. The method as in any of claims 8-12, wherein the sources have a radon release rate of between 1.4 and 1.9 microcurie per centimeter length.

14. The method as in any of claims 8-12, wherein the sources have a radon release rate of between 2.1 and 2.5 microcurie per centimeter length.