Claims

1. An angioplasty balloon catheter characterized by a catheter shaft having an inflatable balloon at its distal end and a constraining structure constraining the expansion of the inflatable balloon, said constraining structure having a non-expanded configuration prior to inflation and an expanded configuration which is smaller than an unconstrained size of the balloon so that the structure restrains the balloon inflation along a plurality of crossing channel lines, carrying at least on a portion of its surface paclitaxel or a polymer-free paclitaxel preparation and at least one lipophilic antioxidant at a ratio of 3-100% by weight of the at least one antioxidant in relation to 100% by weight of the paclitaxel, wherein the at least one lipophilic antioxidant is selected of propyl gallate, nordihydroguaiaretic acid, or resveratrol, wherein scoring or cutting balloons as medical devices are excluded.

2. The medical device as in claim 1, wherein the constraining structure comprises a plurality of circumferentially spaced-apart axial struts and a multiplicity of axially spaced-apart radially expandable rings attached to the axial struts, wherein the axially struts cross the radially expandable rings.

3. The medical device according to claim 2, wherein the angioplasty balloon catheter has a catheter shaft having an inflatable balloon at its distal end and a constraining structure combined with the inflatable balloon, said constraining structure having an expanded configuration which is smaller than an unconstrained size of the balloon so that the structure restrains the balloon inflation along a plurality of crossing channel lines.

4. The medical device as in claims 1-3, wherein the individual struts are each elastic in tension so that they will elongate as the balloon is inflated.

5. The medical device according to any one of claims 1-4, wherein the lipophilic antioxidant is propyl gallate.

6. The medical device according to any one of claims 1-5, wherein the at least one lipophilic antioxidant is contained at a ratio of 5-100% by weight, preferably at a ratio of 10-100% by weight, more preferred at a ratio of 20-100% by weight, and even more preferred at a ratio of 50 – 100% by weight in relation to 100% by weight of the paclitaxel.

7. The medical device according to any one of claims 1-6, wherein the antioxidant load is up to 10 µg/mm² of coated device surface.

8. The medical device according to any one of claims 1-7, which has been sequentially coated polymer-free with the paclitaxel and at least one lipophilic antioxidant in a way that the paclitaxel and the antioxidant are not homogeneously mixed.

Claims

1. An angioplasty balloon catheter **characterized by** a catheter shaft having an inflatable balloon at its distal end and a constraining structure constraining the expansion of the inflatable balloon, said constraining structure having a non-expanded configuration prior to inflation and an expanded configuration which is smaller than an unconstrained size of the balloon so that the structure restrains the balloon inflation along a plurality of crossing channel lines, carrying at least on a portion of its surface paclitaxel or a polymer-free paclitaxel preparation and propyl gallate at a ratio of 3-100% by weight of the at least one antioxidant in relation to 100% by weight of the paclitaxel, wherein scoring or cutting balloons as medical devices are excluded.

2. The medical device as in claim 1, wherein the constraining structure comprises a plurality of circumferentially spacedapart axial struts and a multiplicity of axially spaced-apart radially expandable rings attached to the axial struts, wherein the axially struts cross the radially expandable rings.

3. The medical device according to claim 2, wherein the angioplasty balloon catheter has a catheter shaft having an inflatable balloon at its distal end and a constraining structure combined with the inflatable balloon, said constraining structure having an expanded configuration which is smaller than an unconstrained size of the balloon so that the structure restrains the balloon inflation along a plurality of crossing channel lines.

4. The medical device as in claims 1-3, wherein the individual struts are each elastic in tension so that they will elongate as the balloon is inflated.

5. The medical device according to any one of claims 1-4, wherein the propyl gallate is contained at a ratio of 5-100% by weight, preferably at a ratio of 10-100% by weight, more preferred at a ratio of 20-100% by weight, and even more preferred at a ratio of 50 - 100% by weight in relation to 100% by weight of the paclitaxel.

6. The medical device according to any one of claims 1-5, wherein the propyl gallate load is up to 10 mg/mm2 of coated device surface.

7. The medical device according to any one of claims 1-6, which has been sequentially coated polymer-free with the paclitaxel and propyl gallate in a way that the paclitaxel and the propyl gallate are not homogeneously mixed.