Claims

1. Medical device comprising at least one substrate provided with a coating, wherein the coating comprises a functional layer and the functional layer comprises at least one monosaccharide, **characterized in that** the monosaccharides are linkable directly or indirectly to the substrate via a functionalization of the monosaccharides and wherein the monosaccharides oligomerise or polymerise only upon bonding to the substrate, wherein the monosaccharides in their non-functionalized form comprise a sugar alcohol or a cyclic or heterocyclic compound that can be derived therefrom by dehydration.

2. Medical device according to claim 1, characterized in that the coating comprises a carrier layer which is located on the substrate and has an adhesion promoter, with the functional layer being bonded to the carrier layer.

3. Medical device according to claim 2, characterized in that the bonding of the adhesion promoter to the substrate and/or the bonding of the functional layer to the carrier layer is a covalent bond.

4. Medical device according to claim 2 or 3, characterized in that the adhesion promoter comprises a silicon compound, in particular a silane compound.

5. Medical device according to any one of the preceding claims, characterized in that the sugar alcohol of the functional layer, in its non-functionalized or dehydrated form, comprises at least one sugar alcohol of the molecular formula $C_6H_{14}O_6$.

6. Medical device according to any one of the preceding claims, characterized in that the monosaccharide of the functional layer is functionalized in a form not bonded to the carrier layer or the substrate via at least one reactive multiple bond, in particular a double bond.

7. Medical device according to any one of the preceding claims, characterized in that the reactive double bond is a constituent of a (meth)acrylic group.

8. Medical device according to any one of the preceding claims, characterized in that the substrate comprises at least one metal selected from the group comprising nickel, titanium, platinum, iridium, gold, cobalt, chromium, aluminum, iron and/or an alloy thereof.

9. Medical device according to any one of claims 1 to 7, characterized in that the substrate comprises at least one plastic material selected from the group comprising polyamides (PA), polytetrafluoroethylene (PTFE), expanded polytetrafluoroethylene (ePTFE), polylactides (PLA), polyester, polyether, polyurethane, polyolefins, as well as relevant block copolymers.

10. Medical device according to any one of the preceding claims, characterized in that it is a medical device for endovascular applications.

11. Medical device according to any one of claims 1 to 9, characterized in that it is a medical device for neurovascular applications.

12. Medical device according to any one of claims 1 to 9, characterized in that it is a medical device for cardiovascular applications.

13. A method for coating a medical device comprising a substrate with a coating having a functional layer, which reduces the adhesion of thrombocytes, wherein the functional layer comprises at least one monosaccharide and the monosaccharides are bonded directly or indirectly to the substrate via a functionalization of the monosaccharides, wherein the monosaccharides oligomerise or polymerise only upon bonding to the substrate, and wherein the monosaccharides in

their non-functionalized form comprise a sugar alcohol or a cyclic or heterocyclic compound that can be derived therefrom by dehydration.