(iv) dissociating glycosaminoglycans from the polypeptide-glycosaminoglycan complexes;

(v) collecting the dissociated glycosaminoglycans.

In some examples the mixture comprising glycosaminoglycans is a heparan sulphate preparation obtained from porcine mucosa.

In the present invention a composition comprising HS7 is provided. In some examples a pharmaceutical composition or medicament comprising HS7 is provided.

In one aspect of the present disclosure, a composition, pharmaceutical composition or medicament comprising isolated or purified HS7 is provided, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

In some examples the pharmaceutical composition or medicament further comprises VEGF protein. In another aspect of the present disclosure the pharmaceutical composition or medicament is provided for use in a method of medical treatment.

In the present disclosure HS7 is provided for use in a method of medical treatment. In another aspect of the present disclosure, isolated or purified HS7 is provided for use in a method of medical treatment, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and wherein the HS7 is capable of binding SEQ ID NO:1. In some examples the method of treatment involves the stimulation or promotion of the growth of blood vessels.

In the present disclosure the use of HS7 in the manufacture of a medicament for the treatment of a disease, condition or injury to tissue is provided, wherein the method involves the stimulation or promotion of the growth of blood vessels. In another aspect of the present disclosure, the use of isolated or purified HS7 in the manufacture of a medicament for the treatment of vascular disease, cardiovascular disease, heart disease, ischemia, ischemic disease, stroke, ischemic vascular disease, myocardial infarction, or a disease or condition characterised by decreased blood flow to tissues and/or organs due to blocked or partially blocked arteries or injury to tissue, wherein the treatment involves the stimulation or promotion of the growth of blood vessels is provided, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

In the present disclosure a method of promoting growth of blood vessels is provided, the method comprising administering HS7 to vascular cells or to vascular tissue. In some examples the vascular cells or vascular tissue are contacted with HS7 *in vitro*. In other examples the vascular cells or vascular tissue are contacted with HS7 *in vivo*.

In another aspect of the present disclosure a biological scaffold comprising isolated or purified HS7 is provided, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

Claims:

1. A composition, pharmaceutical composition or medicament comprising isolated or purified HS7, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

2. The pharmaceutical composition or medicament of claim 1 wherein the pharmaceutical composition or medicament further comprises Vascular Endothelial Growth Factor (VEGF) protein.

3. The pharmaceutical composition or medicament of claim 1 or 2 for use in a method of medical treatment.

4. Isolated or purified HS7 for use in a method of medical treatment, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0

ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

5. The isolated or purified HS7 for use according to claim 4, wherein the method involves the stimulation or promotion of the growth of blood vessels.

6. Use of isolated or purified HS7 in the manufacture of a medicament for the treatment of vascular disease, cardiovascular disease, heart disease, ischemia, ischemic disease, stroke, ischemic vascular disease, myocardial infarction, or a disease or condition characterised by decreased blood flow to tissues and/or organs due to blocked or partially blocked arteries or injury to tissue, wherein the treatment involves the stimulation or promotion of the growth of blood vessels,
wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

7. The use according to claim 6 wherein the medicament is to be administered to tissue at or surrounding a wound or location on the patient's body at which blood vessel growth is required.

8. The use of claim 6 or 7 wherein a VEGF protein is to be further administered to the patient.

9. A biocompatible implant or prosthesis comprising a biomaterial and isolated or purified HS7, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and wherein the HS7 is capable of binding SEQ ID NO:1.

10. The implant or prosthesis of claim 9 wherein the implant or prosthesis is coated with said isolated or purified HS7.

11. The implant or prosthesis of claim 9 wherein the implant or prosthesis is impregnated with said isolated or purified HS7.

12. A method of forming a biocompatible implant or prosthesis, the method comprising the step of coating or impregnating a biomaterial with isolated or purified HS7, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0

ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

13. A biological scaffold comprising isolated or purified HS7, wherein HS7 is heparan sulphate having the disaccharide composition:

Disaccharide	Normalised weight percentage
ΔUA,2S-GlcNS,6S	11.08±1.0
ΔUA,2S-GlcNS	4.46±0.4
ΔUA-GlcNS,6S	15.84±1.0
ΔUA,2S-GlcNAc,6S	4.76±0.6
ΔUA-GlcNS	20.27±3.0
ΔUA,2S-GlcNAc	1.01±0.4
ΔUA-GlcNAc,6S	10.63±1.0
ΔUA-GlcNAc	31.95±1.6

following digestion with heparin lyases I, II and III and then subjecting the resulting disaccharide fragments to capillary electrophoresis analysis, and
wherein the HS7 is capable of binding SEQ ID NO:1.

14. The biological scaffold of claim 13, wherein the biological scaffold is an extended-release drug delivery device, tissue valve, tissue valve leaflet, drug-eluting stent, vascular graft, wound healing or skin graft, or orthopaedic prosthesis.

15. The composition, pharmaceutical composition or medicament according to claim 1 or claim 2, the pharmaceutical composition or medicament for use according to claim 3, the isolated or purified HS7 for use according to claim 4 or claim 5, the use according to any one of claims 6 to 8, the implant or prosthesis according to any one of claims 9 to 11, the method of claim 12, or the biological scaffold of claim 13 or claim 14, wherein the HS7 is obtained by a method comprising:

(i) providing a solid support having polypeptide molecules adhered to the support, wherein the polypeptide comprises a heparin-binding domain having the amino acid sequence of SEQ ID NO:1;

(ii) contacting the polypeptide molecules with a mixture comprising glycosaminoglycans such that polypeptide-glycosaminoglycan complexes are allowed to form;

(iii) partitioning polypeptide-glycosaminoglycan complexes from the remainder of the mixture;

(iv) dissociating glycosaminoglycans from the polypeptide-glycosaminoglycan complexes;

(v) collecting the dissociated glycosaminoglycans.

16. The composition, pharmaceutical composition or medicament, the pharmaceutical composition or medicament for use, the isolated or purified HS7 for use, the use, the implant or prosthesis, or the method according to claim 15, wherein the mixture comprising glycosaminoglycans is a heparan sulphate preparation obtained from porcine mucosa.