CLAIMS

1. A cyclic peptide, or a variant or analog thereof, or a cyclic peptidomimetic, with between 10 and 35 amino acids, having a growth factor receptor-binding capability and comprising a peptide with four amino acids PEP1 and a peptide with three amino acids PEP3;

wherein PEP1 is SAIS;

and wherein PEP3 is selected from the group consisting of VPT, VPE, APT, TPT, VPA, APV, VPQ, VSQ, SRV and TQV.

2. A cyclic peptide or a cyclic peptidomimetic according to claim 1, wherein said growth factor receptor is selected from the group consisting of platelet-derived growth factor, platelet-derived angiogenesis factor, vascular endothelial growth factor, platelet-derived epidermal growth factor, transforming growth factor beta, transforming growth factor A, epidermal growth factor, fibroblast growth factor, acidic fibroblast growth factor, basic fibroblast growth factor, insulin-like growth factors 1 and 2, keratinocyte growth factor, tumor necrosis factor, fibroblast growth factor and interleukin-1, Keratinocyte Growth Factor-2, and combinations thereof.

3. A cyclic peptide or a cyclic peptidomimetic according to claims 1 or 2, comprising a peptide with three amino acids PEP3, and an amino acid or a peptide with between two and seven amino acids PEP7; wherein PEP7 is an amino acid or a peptide with between two and seven amino acids of general formula AA^1-AA^2-AA^3-AA^4-AA^5-AA^6-AA^7; wherein AA^1, AA^2, AA^3, AA^4, and AA^5 are independently absent or any amino acids; wherein AA^6 is absent or selected from the group consisting of S, T, C, E, Q, P and R; wherein AA^7 is absent or is selected from the group consisting of S, T, C, E, Q, P and R; wherein at least one of AA^1, AA^2, AA^3, AA^4, AA^5, AA^6 or AA^7 is not absent.

4. A cyclic peptide or a cyclic peptidomimetic according to claims 1 or 2, comprising a peptide with between six and twelve amino acids PEP9; wherein PEP9 is a peptide of general formula PEP7-PEP5; wherein PEP5 is a cyclic peptide of formula PEP3-AA^{11}-AA^{12}; wherein PEP3 is selected from the group consisting of VPT, VPE, APT, TPT, VPA, APV, VPQ, VSQ, SRV and TQV; wherein AA^{11} is selected from the group consisting of E, K, Q, R, A, D, G and H; and wherein AA^{12} is selected from the group consisting of L, M, T, E, Q and H; wherein PEP7 is an amino acid or a peptide with between two and seven amino acids of general formula AA^1-AA^2-AA^3-AA^4-AA^5-AA^6-AA^7; wherein AA^1, AA^2, AA^3, AA^4, and AA^5 are independently absent or any amino acids; wherein AA^6 is absent or selected from the group consisting of S, T, C, E, Q, P and R; wherein AA^7 is absent or is selected from the group consisting of S, T, C, E, Q, P and R.

5. A cyclic peptide or a cyclic peptidomimetic according to any one of claims 1 to 4, wherein the pair PEP5:PEP1 is selected from the group consisting of VPTKM:SAIS, VPTKL:SAIS, VPTQL:SAIS, VPTRL:SAIS, VPTKT:SAIS, VPTAL:SAIS, VPTDL:SAIS, VPEKM:SAIS,

APTKL:SAIS, APTQL:SAIS, TPTKM:SAIS, VPARL:SAIS, APVKT:SAIS, VPQAL:SAIS, VSQDL:SAIS, VPQDL:SAIS, SRVHH:SAIS, and TQVQL:SAIS.

6. A cyclic peptide or a cyclic peptidomimetic according to any one of claims 1 to 5, wherein the triplet PEP7:PEP3:PEP1 is selected from the group consisting of GIPEPXX:VPT:SAIS, HVTKPTX:VPT:SAIS, YVPKPXX:VPT:SAIS, TVPKPXX:VPT:SAIS, AVPKAXX:VPT:SAIS, KVGKAXX:VPT:SAIS, KASKAXX:VPT:SAIS, GSAGPXX:VPT:SAIS, AAPASXX:VPT:SAIS, STPPTXX:VPT:SAIS, HVPKPXX:VPT:SAIS, RVPSTXX:VPT:SAIS, ASAAPXX:VPT:SAIS, ASASPXX:VPT:SAIS, GIPEPXX:VPE:SAIS, HVTKPTX:APT:SAIS, YVPKPXX:APT:SAIS, TVPKPXX:APT:SAIS, AVPKAXX:APT:SAIS, GSAGPXX:TPT:SAIS, AAPASXX:VPA:SAIS, HVPKPXX:APT:SAIS, RVPSTXX:APV:SAIS, ASAAPXX:VPQ:SAIS, ASASPXX:VSQ:SAIS, ASASPXX:VPQ:SAIS, SSVKXQP:SRV:SAIS, and RNVQXRP:TQV:SAIS.

7. A cyclic peptide or a cyclic peptidomimetic according to any one of claims 1 to 6, wherein the triplet PEP7:PEP5:PEP1 is selected from the group consisting of GIPEPXX:VPTKM:SAIS, HVTKPTX:VPTKL:SAIS, YVPKPXX:VPTKL:SAIS, TVPKPXX:VPTQL:SAIS, AVPKAXX:VPTKL:SAIS, KVGKAXX:VPTKL:SAIS, KASKAXX:VPTKL:SAIS, GSAGPXX:VPTKM:SAIS, AAPASXX:VPTRL:SAIS, STPPTXX:VPTRL:SAIS, HVPKPXX:VPTKL:SAIS, RVPSTXX:VPTKT:SAIS, ASAAPXX:VPTAL:SAIS, ASASPXX:VPTDL:SAIS, GIPEPXX:VPEKM:SAIS, HVTKPTX:APTKL:SAIS, YVPKPXX:APTKL:SAIS, TVPKPXX:APTQL:SAIS, AVPKAXX:APTKL:SAIS, GSAGPXX:TPTKM:SAIS, AAPASXX:VPARL:SAIS, HVPKPXX:APTKL:SAIS, RVPSTXX:APVKT:SAIS, ASAAPXX:VPQAL:SAIS, ASASPXX:VSQDL:SAIS, ASASPXX:VPQDL:SAIS, SSVKXQP:SRVHH:SAIS, and RNVQXRP:TQVQL:SAIS.

8. A cyclic peptide or a cyclic peptidomimetic, according to any one of claims 1 to 7, wherein said cyclic peptide or cyclic peptidomimetic may be any one of cyclic peptides of SEQ ID NO: 1 to 12519.

9. A cyclic peptide or a cyclic peptidomimetic, having growth factor receptor-binding capability according to any one of claims 1 to 8, comprising at least one biomaterial-affinity-containing group, wherein said at least one biomaterial-affinity-containing group provides said cyclic peptide or a cyclic peptidomimetic, with the ability to covalently or non-covalently interact with a biomaterial.

10. A functionalized biomaterial comprising at least one cyclic peptide or a cyclic peptidomimetic, according to any one of claims 1 to 9, and a biomaterial.

11. A medical device comprising at least one cyclic peptide or cyclic peptidomimetic, according to any one of claims 1 to 9, or functionalized biomaterial according to claim 10.

12. A medical composition comprising at least one cyclic peptide or cyclic peptidomimetic according to any one of claims 1 to 9, or functionalized biomaterial according to claim 10, and a medically acceptable carrier.

13. A cyclic peptide or a cyclic peptidomimetic according to any one of claims 1 to 9, or functionalized biomaterial according to claim 10, or a medical composition according to claim 12, for use in a medical method.

14. A cyclic peptide cyclic peptidomimetic, functionalized biomaterial or medical composition for a use according to claim 13, wherein said medical method is a method for inducing cell differentiation and for promoting tissue regeneration.

15. A cyclic peptide cyclic peptidomimetic, functionalized biomaterial or medical composition for a use according to claim 13, wherein said medical method is a method selected from the group consisting of enhancing osteogenesis, inducing bone formation, inducing osteocyte maturation, treating, preventing or diagnosing osteoporosis, enhancing chondrogenesis, inducing cartilage formation, inducing chondrocyte maturation, treating or preventing osteoarthritis, treating or preventing costochondritis, treating or preventing herniation, treating or preventing achondroplasia, treating, preventing or diagnosing relapsing polychondritis, treating obesity, Dercum's disease, Multiple symmetric lipomatosis, Familial multiple lipomatosis, Lipodystrophy, Lipedema, atherosclerosis, enhancing tissue closure, and any combination thereof.