CLAIMS

1. A peptide with between 25 and 60 amino acids, having growth factor receptor-binding capability or a peptidomimetic having growth factor receptor-binding capability comprising between 20 and 60 amino acids, wherein said peptidomimetic has a molecular weight comprised between 2,000 and 8,000 Daltons, preferably comprised between 2,000 and 6,000 Da:

comprising a peptide with four amino acids, PEP1, and a peptide with five amino acids, PEP2; wherein PEP1 is selected from the group consisting of SAIS, SSLS, NAIS, SATS, SPIS, EPIS, SPIN, KPLS, EPLP, EPLT, SNIT, RSVK and RPVQ ; wherein PEP2 is selected from the group consisting of LKNYQ, LKVYP, LKKYR, LRKHR, LKYHY, KFKYE, YGKIP, YKQYE, DHHKD, EQLSN, IGEMS, LGEMS, KEVQV and KKATV;

comprising a peptide with three amino acids PEP3 and a peptide with three amino acids PEP4 ; wherein PEP3 is selected from the group consisting of VPT, VPE, APT, TPT, VPA, APV, VPQ, VSQ, SRV and TQV ; wherein PEP4 is selected from the group consisting of VVE, TVE, VVR, VVK, VAE, AVS, VVD, VEE, VRS, VKS, QHN, EHS, EEH and EDH; and

wherein the RMSD value of the structure coordinates of said peptide or peptidomimetic with respect to PEPREF is 2.45Å (Angstroms) or less, and wherein PEPREF is

ATOM	511	N	LYS	A	1	-14.570	46.437	27.424
ATOM	512	CA	LYS	A	1	-13.512	45.748	28.151
ATOM	513	C	LYS	A	1	-13.655	44.259	27.884
ATOM	514	O	LYS	A	1	-12.769	43.463	28.197
ATOM	515	CB	LYS	A	1	-13.605	46.029	29.652
ATOM	516	CG	LYS	A	1	-13.640	47.509	29.991
ATOM	517	CD	LYS	A	1	-12.615	48.297	29.183
ATOM	518	CE	LYS	A	1	-12.625	49.768	29.575
ATOM	519	NZ	LYS	A	1	-13.994	50.369	29.497
ATOM	520	N	ILE	A	2	-14.792	43.890	27.309
ATOM	521	CA	ILE	A	2	-15.051	42.499	26.967
ATOM	522	C	ILE	A	2	-14.911	42.370	25.444
ATOM	523	O	ILE	A	2	-15.531	43.125	24.683
ATOM	524	CB	ILE	A	2	-16.466	42.065	27.401
ATOM	525	CG1	ILE	A	2	-16.630	42.238	28.915
ATOM	526	CG2	ILE	A	2	-16.710	40.629	26.985
ATOM	527	CD1	ILE	A	2	-15.631	41.478	29.30
ATOM	528	N	PRO	A	3	-14.085	41.411	24.989
ATOM	529	CA	PRO	A	3	-13.789	41.109	23.588
ATOM	530	C	PRO	A	3	-14.998	40.695	22.768
ATOM	531	O	PRO	A	3	-15.969	40.164	23.305
ATOM	532	CB	PRO	A	3	-12.785	39.968	23.688
ATOM	533	CG	PRO	A	3	-12.156	40.166	25.007
ATOM	534	CD	PRO	A	3	-13.330	40.506	25.867
ATOM	535	N	LYS	A	4	-14.937	40.937	21.463
ATOM	536	CA	LYS	A	4	-16.023	40.529	20.590
ATOM	537	C	LYS	A	4	-15.886	39.015	20.391
ATOM	538	O	LYS	A	4	-14.903	38.415	20.831
ATOM	539	CB	LYS	A	4	-15.926	41.244	19.245
ATOM	540	CG	LYS	A	4	-15.802	42.751	19.355
ATOM	541	CD	LYS	A	4	-16.292	43.433	18.083

ATOM	542	CE	LYS	A	4	-16.162	44.943	18.177
ATOM	543	NZ	LYS	A	4	-16.825	45.628	17.019
ATOM	544	N	ALA	A	5	-16.85	38.393	19.759
ATOM	545	CA	ALA	A	5	-16.811	36.955	19.507
ATOM	546	C	ALA	A	5	-15.772	36.771	18.416
ATOM	547	O	ALA	A	5	-15.727	37.534	17.455
ATOM	548	CB	ALA	A	5	-18.168	36.419	19.043
ATOM	549	N	CYS	A	6	-14.935	35.756	18.562
ATOM	550	CA	CYS	A	6	-13.887	35.518	17.584
ATOM	551	C	CYS	A	6	-14.347	34.765	16.338
ATOM	552	O	CYS	A	6	-15.327	34.018	16.368
ATOM	553	CB	CYS	A	6	-12.743	34.768	18.241
ATOM	554	SG	CYS	A	6	-11.198	34.959	17.353
ATOM	555	N	CYS	A	7	-13.623	34.973	15.243
ATOM	556	CA	CYS	A	7	-13.931	34.328	13.969
ATOM	557	C	CYS	A	7	-13.091	33.071	13.798
ATOM	558	O	CYS	A	7	-11.961	33.123	13.302
ATOM	559	CB	CYS	A	7	-13.653	35.290	12.824
ATOM	560	SG	CYS	A	7	-13.930	34.633	11.154
ATOM	561	N	VAL	A	8	-13.654	31.941	14.209
ATOM	562	CA	VAL	A	8	-12.949	30.684	14.110
ATOM	563	C	VAL	A	8	-13.653	29.733	13.157
ATOM	564	O	VAL	A	8	-14.759	30.016	12.687
ATOM	565	CB	VAL	A	8	-12.814	30.038	15.492
ATOM	566	CG1	VAL	A	8	-11.807	30.825	16.337
ATOM	567	CG2	VAL	A	8	-14.161	30.006	16.170
ATOM	568	N	PRO	A	9	-13.003	28.601	12.828
ATOM	569	CA	PRO	A	9	-13.593	27.615	11.918
ATOM	570	C	PRO	A	9	-14.726	26.886	12.631
ATOM	571	O	PRO	A	9	-14.581	26.476	13.780
ATOM	572	CB	PRO	A	9	-12.423	26.676	11.601
ATOM	573	CG	PRO	A	9	-11.204	27.487	11.925
ATOM	574	CD	PRO	A	9	-11.620	28.226	13.163
ATOM	575	N	THR	A	10	-15.847	26.721	11.942
ATOM	576	CA	THR	A	10	-16.999	26.060	12.527
ATOM	577	C	THR	A	10	-17.334	24.767	11.804
ATOM	578	O	THR	A	10	-18.097	23.943	12.303
ATOM	579	CB	THR	A	10	-18.211	27.010	12.523
ATOM	580	OG1	THR	A	10	-18.491	27.445	11.185
ATOM	581	CG2	THR	A	10	-17.902	28.230	13.375
ATOM	582	N	GLU	A	11	-16.750	24.586	10.627
ATOM	583	CA	GLU	A	11	-16.980	23.377	9.848
ATOM	584	C	GLU	A	11	-15.643	22.935	9.246
ATOM	585	O	GLU	A	11	-15.029	23.666	8.464
ATOM	586	CB	GLU	A	11	-17.981	23.624	8.715
ATOM	587	CG	GLU	A	11	-19.421	23.807	9.163
ATOM	588	CD	GLU	A	11	-19.686	25.166	9.770
ATOM	589	OE1	GLU	A	11	-19.478	26.175	9.073
ATOM	590	OE2	GLU	A	11	-20.111	25.227	10.939
ATOM	591	N	LEU	A	12	-15.183	21.749	9.622
ATOM	592	CA	LEU	A	12	-13.923	21.254	9.104
ATOM	593	C	LEU	A	12	-14.062	19.912	8.386
ATOM	594	O	LEU	A	12	-15.136	19.299	8.359
ATOM	595	CB	LEU	A	12	-12.893	21.144	10.230
ATOM	596	CG	LEU	A	12	-12.660	22.422	11.054
ATOM	597	CD1	LEU	A	12	-13.475	22.350	12.337
ATOM	598	CD2	LEU	A	12	-11.181	22.586	11.399

ATOM	599	N	SER	A	13	-12.971	19.476	7.771
ATOM	600	CA	SER	A	13	-12.964	18.218	7.046
ATOM	601	C	SER	A	13	-11.568	17.628	7.164
ATOM	602	O	SER	A	13	-10.613	18.320	7.550
ATOM	603	CB	SER	A	13	-13.346	18.435	5.578
ATOM	604	OG	SER	A	13	-12.404	19.261	4.923
ATOM	605	N	ALA	A	13	-11.449	16.352	6.818
ATOM	606	CA	ALA	A	13	-10.179	15.665	6.949
ATOM	607	C	ALA	A	13	-9.421	15.471	5.652
ATOM	608	O	ALA	A	13	-9.941	15.720	4.563
ATOM	609	CB	ALA	A	13	-10.413	14.306	7.626
ATOM	610	N	ILE	A	14	-8.171	15.046	5.783
ATOM	611	CA	ILE	A	14	-7.343	14.746	4.623
ATOM	612	C	ILE	A	14	-6.475	13.559	5.004
ATOM	613	O	ILE	A	14	-6.212	13.316	6.183
ATOM	614	CB	ILE	A	14	-6.401	15.916	4.183
ATOM	615	CG1	ILE	A	14	-5.284	16.106	5.200
ATOM	616	CG2	ILE	A	14	-7.188	17.211	3.982
ATOM	617	CD1	ILE	A	14	-4.173	16.973	4.696
ATOM	618	N	SER	A	15	-6.045	12.806	3.999
ATOM	619	CA	SER	A	15	-5.187	11.662	4.242
ATOM	620	C	SER	A	15	-3.740	12.089	4.217
ATOM	621	O	SER	A	15	-3.360	13.020	3.508
ATOM	622	CB	SER	A	15	-5.416	10.584	3.185
ATOM	623	OG	SER	A	15	-6.667	9.971	3.401
ATOM	624	N	MET	A	16	-2.933	11.409	5.012
ATOM	625	CA	MET	A	16	-1.518	11.700	5.047
ATOM	626	C	MET	A	16	-0.778	10.414	5.244
ATOM	627	O	MET	A	16	-1.137	9.594	6.078
ATOM	628	CB	MET	A	16	-1.170	12.694	6.164
ATOM	629	CG	MET	A	16	-1.848	14.042	5.974
ATOM	630	SD	MET	A	16	-1.017	15.431	6.760
ATOM	631	CE	MET	A	16	-0.799	14.823	8.475
ATOM	632	N	LEU	A	17	0.238	10.231	4.426
ATOM	633	CA	LEU	A	17	1.077	9.065	4.508
ATOM	634	C	LEU	A	17	2.289	9.610	5.264
ATOM	635	O	LEU	A	17	2.939	10.565	4.818
ATOM	636	CB	LEU	A	17	1.461	8.608	3.100
ATOM	637	CG	LEU	A	17	2.324	7.355	2.955
ATOM	638	CD1	LEU	A	17	1.553	6.145	3.445
ATOM	639	CD2	LEU	A	17	2.723	7.190	1.492
ATOM	640	N	TYR	A	18	2.581	9.029	6.418
ATOM	641	CA	TYR	A	18	3.706	9.501	7.196
ATOM	642	C	TYR	A	18	4.434	8.333	7.835
ATOM	643	O	TYR	A	18	4.081	7.186	7.603
ATOM	644	CB	TYR	A	18	3.222	10.458	8.281
ATOM	645	CG	TYR	A	18	2.386	9.782	9.346
ATOM	646	CD1	TYR	A	18	1.029	9.527	9.147
ATOM	647	CD2	TYR	A	18	2.961	9.379	10.550
ATOM	648	CE1	TYR	A	18	0.273	8.894	10.128
ATOM	649	CE2	TYR	A	18	2.218	8.745	11.526
ATOM	650	CZ	TYR	A	18	0.877	8.508	11.317
ATOM	651	OH	TYR	A	18	0.134	7.922	12.318
ATOM	652	N	LEU	A	19	5.439	8.651	8.650
ATOM	653	CA	LEU	A	19	6.255	7.661	9.347
ATOM	654	C	LEU	A	19	6.210	7.946	10.847
ATOM	655	O	LEU	A	19	6.685	8.992	11.288

ATOM	656	CB	LEU	A	19	7.701	7.763	8.871
ATOM	657	CG	LEU	A	19	7.901	7.850	7.359
ATOM	658	CD1	LEU	A	19	9.300	8.379	7.039
ATOM	659	CD2	LEU	A	19	7.669	6.482	6.748
ATOM	660	N	ASP	A	20	5.652	7.035	11.639
ATOM	661	CA	ASP	A	20	5.594	7.282	13.071
ATOM	662	C	ASP	A	20	7.001	7.289	13.662
ATOM	663	O	ASP	A	20	7.985	7.185	12.932
ATOM	664	CB	ASP	A	20	4.714	6.244	13.786
ATOM	665	CG	ASP	A	20	5.292	4.837	13.752
ATOM	666	OD1	ASP	A	20	6.533	4.678	13.775
ATOM	667	OD2	ASP	A	20	4.491	3.882	13.732
ATOM	668	N	GLU	A	21	7.089	7.413	14.981
ATOM	669	CA	GLU	A	21	8.375	7.451	15.669
ATOM	670	C	GLU	A	21	9.250	6.212	15.463
ATOM	671	O	GLU	A	21	10.459	6.246	15.738
ATOM	672	CB	GLU	A	21	8.164	7.699	17.171
ATOM	673	CG	GLU	A	21	7.220	6.731	17.868
ATOM	674	CD	GLU	A	21	5.828	6.726	17.257
ATOM	675	OE1	GLU	A	21	5.347	7.810	16.856
ATOM	676	OE2	GLU	A	21	5.210	5.640	17.185
ATOM	677	N	ASN	A	22	8.646	5.133	14.966
ATOM	678	CA	ASN	A	22	9.377	3.889	14.727
ATOM	679	C	ASN	A	22	9.682	3.647	13.249
ATOM	680	O	ASN	A	22	10.095	2.554	12.853
ATOM	681	CB	ASN	A	22	8.591	2.707	15.299
ATOM	682	CG	ASN	A	22	8.384	2.827	16.794
ATOM	683	OD1	ASN	A	22	9.349	2.930	17.560
ATOM	684	ND2	ASN	A	22	7.125	2.819	17.221
ATOM	685	N	GLU	A	23	9.485	4.672	12.435
ATOM	686	CA	GLU	A	23	9.749	4.558	11.015
ATOM	687	C	GLU	A	23	8.790	3.603	10.299
ATOM	688	O	GLU	A	23	9.145	2.996	9.292
ATOM	689	CB	GLU	A	23	11.203	4.129	10.784
ATOM	690	CG	GLU	A	23	12.232	5.210	11.082
ATOM	691	CD	GLU	A	23	12.072	6.410	10.166
ATOM	692	OE1	GLU	A	23	12.108	6.218	8.928
ATOM	693	OE2	GLU	A	23	11.907	7.541	10.677
ATOM	694	N	LYS	A	24	7.580	3.459	10.826
ATOM	695	CA	LYS	A	24	6.583	2.624	10.175
ATOM	696	C	LYS	A	24	5.815	3.540	9.228
ATOM	697	O	LYS	A	24	5.553	4.692	9.552
ATOM	698	CB	LYS	A	24	5.602	2.039	11.182
ATOM	699	CG	LYS	A	24	6.163	0.963	12.058
ATOM	700	CD	LYS	A	24	5.068	0.387	12.947
ATOM	701	CE	LYS	A	24	5.648	-0.511	14.031
ATOM	702	NZ	LYS	A	24	4.577	-1.091	14.886
ATOM	703	N	VAL	A	25	5.455	3.037	8.057
ATOM	704	CA	VAL	A	25	4.713	3.849	7.116
ATOM	705	C	VAL	A	25	3.237	3.737	7.444
ATOM	706	O	VAL	A	25	2.657	2.659	7.383
ATOM	707	CB	VAL	A	25	4.969	3.396	5.681
ATOM	708	CG1	VAL	A	25	4.250	4.317	4.708
ATOM	709	CG2	VAL	A	25	6.462	3.393	5.422
ATOM	710	N	VAL	A	25	2.637	4.864	7.800
ATOM	711	CA	VAL	A	25	1.231	4.916	8.170
ATOM	712	C	VAL	A	25	0.418	5.778	7.213

ATOM	713	O	VAL	A	25	0.871	6.841	6.774
ATOM	714	CB	VAL	A	25	1.062	5.531	9.577
ATOM	715	CG1	VAL	A	25	-0.341	5.253	10.115
ATOM	716	CG2	VAL	A	25	2.128	5.006	10.506
ATOM	717	N	LEU	A	26	-0.779	5.306	6.887
ATOM	718	CA	LEU	A	26	-1.706	6.048	6.040
ATOM	719	C	LEU	A	26	-2.862	6.358	6.992
ATOM	720	O	LEU	A	26	-3.679	5.497	7.297
ATOM	721	CB	LEU	A	26	-2.201	5.189	4.876
ATOM	722	CG	LEU	A	26	-3.204	5.898	3.952
ATOM	723	CD1	LEU	A	26	-2.519	7.077	3.262
ATOM	724	CD2	LEU	A	26	-3.755	4.925	2.929
ATOM	725	N	LYS	A	27	-2.910	7.584	7.489
ATOM	726	CA	LYS	A	27	-3.952	7.965	8.430
ATOM	727	C	LYS	A	27	-4.831	9.082	7.881
ATOM	728	O	LYS	A	27	-4.374	9.924	7.103
ATOM	729	CB	LYS	A	27	-3.305	8.409	9.738
ATOM	730	CG	LYS	A	27	-4.265	8.720	10.859
ATOM	731	CD	LYS	A	27	-3.509	9.382	11.994
ATOM	732	CE	LYS	A	27	-4.397	9.654	13.186
ATOM	733	NZ	LYS	A	27	-4.839	8.377	13.816
ATOM	734	N	ASN	A	28	-6.098	9.078	8.279
ATOM	735	CA	ASN	A	28	-7.045	10.095	7.843
ATOM	736	C	ASN	A	28	-7.147	11.103	8.979
ATOM	737	O	ASN	A	28	-7.815	10.842	9.969
ATOM	738	CB	ASN	A	28	-8.408	9.455	7.560
ATOM	739	CG	ASN	A	28	-9.518	10.485	7.364
ATOM	740	OD1	ASN	A	28	-9.360	11.444	6.597
ATOM	741	ND2	ASN	A	28	-10.653	10.288	8.050
ATOM	742	N	TYR	A	29	-6.473	12.241	8.837
ATOM	743	CA	TYR	A	29	-6.470	13.278	9.869
ATOM	744	C	TYR	A	29	-7.680	14.204	9.836
ATOM	745	O	TYR	A	29	-7.928	14.870	8.835
ATOM	746	CB	TYR	A	29	-5.197	14.130	9.768
ATOM	747	CG	TYR	A	29	-3.913	13.420	10.155
ATOM	748	CD1	TYR	A	29	-3.378	12.394	9.363
ATOM	749	CD2	TYR	A	29	-3.220	13.792	11.306
ATOM	750	CE1	TYR	A	29	-2.181	11.765	9.713
ATOM	751	CE2	TYR	A	29	-2.032	13.171	11.665
ATOM	752	CZ	TYR	A	29	-1.516	12.167	10.869
ATOM	753	OH	TYR	A	29	-0.319	11.603	11.231
ATOM	754	N	GLN	A	30	-8.408	14.254	10.950
ATOM	755	CA	GLN	A	30	-9.606	15.088	11.089
ATOM	756	C	GLN	A	30	-9.287	16.541	11.431
ATOM	757	O	GLN	A	30	-8.213	16.847	11.925
ATOM	758	CB	GLN	A	30	-10.500	14.541	12.202
ATOM	759	CG	GLN	A	30	-10.807	13.074	12.104
ATOM	760	CD	GLN	A	30	-11.744	12.749	10.969
ATOM	761	OE1	GLN	A	30	-11.900	11.582	10.602
ATOM	762	NE2	GLN	A	30	-12.385	13.773	10.405
ATOM	763	N	ASP	A	31	-10.238	17.430	11.173
ATOM	764	CA	ASP	A	31	-10.085	18.851	11.495
ATOM	765	C	ASP	A	31	-8.867	19.494	10.842
ATOM	766	O	ASP	A	31	-8.195	20.335	11.442
ATOM	767	CB	ASP	A	31	-10.000	19.025	13.019
ATOM	768	CG	ASP	A	31	-11.247	18.520	13.742
ATOM	769	OD1	ASP	A	31	-12.349	18.587	13.155

ATOM	770	OD2	ASP	A	31	-11.130	18.069	14.908
ATOM	771	N	MET	A	32	-8.582	19.113	9.606
ATOM	772	CA	MET	A	32	-7.426	19.662	8.918
ATOM	773	C	MET	A	32	-7.780	20.808	7.987
ATOM	774	O	MET	A	32	-7.021	21.768	7.855
ATOM	775	CB	MET	A	32	-6.741	18.559	8.125
ATOM	776	CG	MET	A	32	-6.037	17.540	8.980
ATOM	777	SD	MET	A	32	-4.559	18.231	9.714
ATOM	778	CE	MET	A	32	-3.406	18.041	8.318
ATOM	779	N	VAL	A	33	-8.942	20.707	7.351
ATOM	780	CA	VAL	A	33	-9.381	21.719	6.401
ATOM	781	C	VAL	A	33	-10.579	22.536	6.858
ATOM	782	O	VAL	A	33	-11.586	21.988	7.292
ATOM	783	CB	VAL	A	33	-9.701	21.056	5.027
ATOM	784	CG1	VAL	A	33	-10.388	22.040	4.087
ATOM	785	CG2	VAL	A	33	-8.423	20.561	4.412
ATOM	786	N	VAL	A	34	-10.465	23.855	6.739
ATOM	787	CA	VAL	A	34	-11.553	24.745	7.113
ATOM	788	C	VAL	A	34	-12.610	24.835	6.016
ATOM	789	O	VAL	A	34	-12.373	25.403	4.950
ATOM	790	CB	VAL	A	34	-11.057	26.176	7.407
ATOM	791	CG1	VAL	A	34	-12.240	27.097	7.601
ATOM	792	CG2	VAL	A	34	-10.222	26.186	8.655
ATOM	793	N	GLU	A	35	-13.779	24.266	6.282
ATOM	794	CA	GLU	A	35	-14.870	24.311	5.321
ATOM	795	C	GLU	A	35	-15.702	25.565	5.572
ATOM	796	O	GLU	A	35	-16.011	26.303	4.645
ATOM	797	CB	GLU	A	35	-15.733	23.054	5.447
ATOM	798	CG	GLU	A	35	-14.969	21.782	5.128
ATOM	799	CD	GLU	A	35	-14.515	21.732	3.676
ATOM	800	OE1	GLU	A	35	-15.036	22.519	2.858
ATOM	801	OE2	GLU	A	35	-13.643	20.902	3.344
ATOM	802	N	GLY	A	36	-16.053	25.811	6.829
ATOM	803	CA	GLY	A	36	-16.834	26.990	7.152
ATOM	804	C	GLY	A	36	-16.322	27.785	8.341
ATOM	805	O	GLY	A	36	-15.671	27.249	9.237
ATOM	806	N	CYS	A	37	-16.616	29.077	8.360
ATOM	807	CA	CYS	A	37	-16.177	29.917	9.466
ATOM	808	C	CYS	A	37	-17.347	30.502	10.249
ATOM	809	O	CYS	A	37	-18.467	30.628	9.741
ATOM	810	CB	CYS	A	37	-15.301	31.058	8.967
ATOM	811	SG	CYS	A	37	-13.785	30.558	8.098
ATOM	812	N	GLY	A	38	-17.079	30.867	11.494
ATOM	813	CA	GLY	A	38	-18.129	31.430	12.309
ATOM	814	C	GLY	A	38	-17.622	32.176	13.518
ATOM	815	O	GLY	A	38	-16.425	32.235	13.791
ATOM	816	N	CYS	A	39	-18.564	32.753	14.245
ATOM	817	CA	CYS	A	39	-18.253	33.505	15.439
ATOM	818	C	CYS	A	39	-18.543	32.670	16.665
ATOM	819	O	CYS	A	39	-19.620	32.084	16.794
ATOM	820	CB	CYS	A	39	-19.068	34.779	15.442
ATOM	821	SG	CYS	A	39	-18.539	35.799	14.053

2. A peptide or a 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 peptide or a peptidomimetic according to claim 1 or 2, comprising a peptide with eight amino acids PEP12, and a peptide with five amino acids PEP2; wherein PEP12 is a peptide of general formula PEP1-AA^{17}-PEP11; wherein AA^{17} is selected from the group consisting of G, A, V, L, I, P, F, M, W, T and S; wherein PEP11 is a peptide with 3 amino acids of general formula AA^{18}-AA^{19}-AA^{20}; wherein AA^{18} is selected from the group consisting of L, V, Q, A and R; wherein AA^{19} is selected from the group consisting of F, W, H, Y, I and K; wherein AA^{20} is selected from the group consisting of L, F, Y, K, I, V and M.

4. A peptide or a peptidomimetic according to claim 3, wherein PEP11 is selected from the group consisting of LYL, LFF, LYF, LYY, LYK, LYI, LFI, LYV, VYY, QIM, AKV and RKI.

5. A peptide or a peptidomimetic according to any one of claims 1 to 4, comprising a peptide with five amino acids PEP5 and a peptide with between five and seven amino acids PEP6; wherein PEP5 is a peptide of general 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 PEP6 is a peptide of general formula AA^{26}-AA^{27}-AA^{28}-AA^{29}-PEP4; wherein PEP4 is selected from the group consisting of VVE, TVE, VVR, VVK, VAE, AVS, VVD, VEE, VRS, VKS, QHN, EHS, EEH and EDH; wherein AA^{26} is absent or selected from the group consisting of amino acids having an acidic group-containing side chain, preferably is absent or is E; wherein AA^{27} and AA^{28} are independently selected from the group consisting of amino acids having an acidic group-containing side chain and amino acids having an apolar side chain; and wherein AA^{29} is absent or selected from the group consisting of amino acids having a polar, non-charged group-containing side chain, preferably is absent or is S.

6. A peptide or a peptidomimetic according to any one of claims 1 to 5, comprising a peptide with between six and twelve amino acids PEP9 and a peptide with between six and eleven amino acids PEP10; wherein PEP9 is a peptide of general formula PEP7-PEP5; wherein PEP5 is a 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 naturally occurring and non-naturally occurring 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 PEP10 is a peptide of general formula PEP6-PEP8; wherein PEP6 is a peptide of formula AA^{26}-AA^{27}-AA^{28}-AA^{29}-PEP4; wherein PEP4 is selected from the group consisting of VVE, TVE, VVR, VVK, VAE, AVS, VVD, VEE, VRS, VKS, QHN, EHS, EEH and EDH; wherein AA^{26} is absent or selected from the group consisting of amino acids having an acidic group-containing side chain, preferably is absent or is E; wherein AA^{27} and AA^{28} are independently selected from the group consisting of amino acids having an acidic group-containing side chain and amino acids having an apolar side chain; and wherein AA^{29} is absent or selected from the group consisting of amino acids having a polar, non-charged group-containing side chain, preferably is absent or is S; wherein PEP8 is an amino acid or a peptide with between two and six amino acids of general formula AA^{33}-AA^{34}-AA^{35}-AA^{36}-AA^{37}-AA^{38}; AA^{33} is absent or is selected from the group consisting of any naturally occurring and non-naturally occurring amino acids at the exception of amino acids having an aromatic group-containing side chain; AA^{34} is absent or is selected from the group consisting of amino acids having an acidic group-containing side chain and amino acids having an aliphatic side chain; wherein AA^{35} is absent or is selected from the group consisting of amino acids having a polar, non-charged group-containing side chain, preferably is S or C; wherein AA^{36} is absent or is selected from the group consisting of amino acids having an acidic group-containing side chain and amino acids having an aliphatic side chain; wherein AA^{37} is absent or is selected from the group consisting of amino acids having a polar, non-charged group-containing side chain, preferably is S or C; wherein AA^{38} is absent or is selected from the group consisting of any naturally occurring and non-naturally occurring amino acids.

7. A peptide or a peptidomimetic according to any one of claims 1 to 6, wherein the pair PEP1:PEP2 is selected from the group consisting of SAIS:LKNYQ, SSLS:LKVYP, NAIS:LKKYR, SATS:LRKHR, SPIS:LKYHY, EPIS:KFKYE, SPIN:YGKIP, SPIS:YKQYE, KPLS:DHHKD, EPLP:EQLSN, EPLT:EQLSN, SNIT:IGEMS, SNIT:LGEMS, RSVK:KEVQV and RPVQ:KKATV.

8. A peptide or a peptidomimetic according to any one of claims 1 to 7, wherein the pair PEP12:PEP2 is selected from the group consisting of SAIS-AA^{17}-LYL:LKNYQ, SSLS-AA^{17}-LFF:LKVYP, NAIS-AA^{17}-LYF:LKKYR, SATS-AA^{17}-LYY:LRKHR, SPIS-AA^{17}-LYK:LKYHY, EPIS-AA^{17}-LYL:KFKYE, SPIN-AA^{17}-LYF:YGKIP, SPIS-AA^{17}-LYI:YKQYE, SPIS-AA^{17}-LFI:YKQYE, KPLS-AA^{17}-LYV:DHHKD, EPLP-AA^{17}-VYY:EQLSN, EPLT-AA^{17}-LYY:EQLSN, SNIT-AA^{17}-QIM:IGEMS, SNIT-AA^{17}-QIM:LGEMS, RSVK-AA^{17}-AKV:KEVQV and RPVQ-AA^{17}-RKI:KKATV ; wherein AA^{17} is selected from the group consisting of G, A, V, L, I, P, F, M, W, T and S.

9. A peptide or a peptidomimetic according to any one of claims 1 to 8, wherein the pair PEP3:PEP4 is selected from the group consisting of VPT:VVE, VPE:TVE, APT:VVR, APT:VVK, VPT:VAE, VPT:AVS, TPT:VVD, VPA:VVE, APV:VEE, VPQ:VRS, VSQ:VKS, VPQ:VKS, VPT:QHN, VPT:EHS, SRV:EEH and TQV:EDH.

10. A peptide or a peptidomimetic according to any one of claims 1 to 9, wherein the pair PEP5:PEP6 is selected from the group consisting of VPT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VVE, VPE-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-TVE, APT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VVR, APT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VVK, VPT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VAE, VPT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-AVS, TPT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VVD, VPA-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VVE, APV-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VEE, VPQ-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VRS, VSQ-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VKS, VPQ-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-VKS, VPT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-QHN, VPT-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-EHS, SRV-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-EEH and TQV-AA^{11}-AA^{12}:AA^{26}-AA^{27}-AA^{28}-AA^{29}-EDH.

11. A peptide or a peptidomimetic according to any one of claims 1 to 10, wherein the pair PEP1:PEP11 is selected from the group consisting of SAIS:LYL, SSLS:LFF, NAIS:LYF, SATS:LYY, SPIS:LYK, SPIS:LYI, SPIS:LFI, EPIS:LYL, SPIN:LYF, KPLS:LYV, EPLP:VYY, EPLT:LYY, SNIT:QIM, RSVK:AKV and RPVQ:RKI.

12. A peptide or a peptidomimetic according to any one of claims 1 to 11, wherein said peptide or peptidomimetic may be any one of peptides of SEQ ID NO: 1 to 2157 and 2242 to 84108.

13. A peptide or a peptidomimetic having growth factor receptor-binding capability, according to any one of claims 1 to 12, comprising at least one biomaterial-affinity-containing group, wherein said at least one biomaterial-affinity-containing group provides said peptide or peptidomimetic with the ability to covalently or non-covalently interact with a biomaterial.

14. A functionalized biomaterial comprising at least one peptide or peptidomimetic according to any one of claims 1 to 13, and a biomaterial.

15. A medical device comprising at least one peptide or peptidomimetic according to any one of claims 1 to 13, or functionalized biomaterial according to claim 14.

16. A medical composition comprising at least one peptide or peptidomimetic according to any one of claims 1 to 13, or functionalized biomaterial according to claim 14, and a medically acceptable carrier.

17. A peptide or a peptidomimetic according to any one of claims 1 to 13, a functionalized biomaterial according to claim 14, or a medical composition according to claim 16, for use in a medical method, wherein said medical method is a pharmaceutical, surgical, dermatological, prophylactic, diagnostic or imaging method.

18. A peptide, peptidomimetic, functionalized biomaterial, or medical composition for a use according to claim 17, wherein said medical method is a method for inducing cell differentiation and promoting tissue regeneration.

19. A peptide, peptidomimetic, functionalized biomaterial, or medical composition for a use according to claim 18, 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; enhancing endothelization, enhancing vascularization/angiogenesis, treating, preventing or diagnosing at least one of coronary artery disease, cardiomyopathy, hypertensive heart disease, heart failure, cor pulmonale, cardiac dysrhythmias, inflammatory heart disease, endocarditis, inflammatory cardiomegaly, myocarditis, valvular heart disease, cerebrovascular disease, peripheral arterial disease, congenital heart disease, or rheumatic heart disease; enhancing axonal dendritic neuron growth, promoting neuron-regeneration, treating, preventing or diagnosing neuron degeneration-related conditions and diseases; enhancing eye retina cell regeneration, treating, preventing or diagnosing eye retina cell degeneration-related conditions or diseases; enhancing renal functions, preventing, treating or diagnosing kidneys failure, chronic kidney disease, and/or renal fibrosis; enhancing fibrous tissue formation, promoting tendon and ligament regeneration, preventing, treating or diagnosing tendon/ligament cell degeneration; hair follicle tissue regeneration, hair follicle stem cell activation, preventing, treating or diagnosing alopecia areata, alopecia totalis, alopecia universalis, androgenic alopecia, telogen effluvium, anagen effluvium or chemotherapy-induced alopecia; enhancing tissue closure; promoting female fertility, and treating, preventing, or diagnosing female infertility; myopathies, muscular atrophy, disuse atrophy, denervation atrophy, muscular dystrophies such as the Duchenne muscular dystrophy (DMD), and the Becker muscular dystrophy (BMD), fibrosis, fibrositis, muscle weakness, fatigue, cramps, fibromyalgia, or chronic muscle pain syndrome; treating asthma, Chronic obstructive pulmonary disease, Chronic bronchitis, Emphysema, Cystic fibrosis, Pulmonary edema, Acute respiratory distress syndrome, Pneumoconiosis, Interstitial lung disease, Sarcoidosis, Idiopathic pulmonary fibrosis, Pulmonary embolism, Pulmonary hypertension, Pleural effusion, Pneumothorax, Mesothelioma, Granulomatosis with polyangiitis, Goodpasture syndrome, Pulmonary hyperplasia, Infant respiratory distress syndrome, Chronic obstructive pulmonary disease, Silicosis, Sleep Apnea, Severe Acute Respiratory Syndrome,

Pulmonary fibrosis, Primary ciliary dyskinesia, Pneumoconiosis, Hypersensitivity Pneumonitis, Cryptogenic Organizing Pneumonia (Bronchiolitis Obliterans Organizing Pneumonia, Byssinosis, Bronchopulmonary Dysplasia, Bronchiolitis, Bronchiectasis, Asbestosis, Pertussis, Middle Eastern Respiratory Syndrome, Pneumonia, Tuberculosis, Bronchitis, Histoplasmosis, Coccidioidomycosis, and Acute bronchitis; treating anemia, Iron-deficiency anemia, Anemia of chronic disease, Pernicious anemia, Aplastic anemia, Autoimmune hemolytic anemia, Thalassemia, Sickle cell anemia, Polycythemia vera, Vitamin deficiency anemia, Hemolytic anemia, Thrombocytopenia, Idiopathic thrombocytopenic purpura, Heparin-induced thrombocytopenia, Thrombotic thrombocytopenic purpura, Essential thrombocytosis, Thrombosis, Hemophilia, von Willebrand disease, Hypercoaguable state, Deep venous thrombosis, Disseminated intravascular coagulation, Thrombocytopenia, Immune Thrombocytopenia, Drug-induced thrombocytopenia, Gestational thrombocytopenia, Thrombotic microangiopathies, Drug-induced thrombotic microangiopathies, Complement-mediated thrombotic microangiopathies, Mixed cryoglobulinemia, Eosinophilia, Eosinopenia, Idiopathic hypereosinophilic syndrome, Antiphospholipid syndrome, Glanzmann's thrombasthenia, Wiskott–Aldrich syndrome, Leishmania infection, Toxoplasmosis, Hereditary hypogammaglobulinemia, Nonfamilial hypogammaglobulinemia, Leukopenia, Agranulocytosis, Basopenia, Bernard–Soulier syndrome, Malaria, Sepsis, and Hemolytic uremic syndrome; treating obesity, Dercum's disease, Multiple symmetric lipomatosis, Familial multiple lipomatosis, Lipodystrophy, Lipedema, and Atherosclerosis.

20. A screening method for selecting a peptide or a peptidomimetic having the ability to induce tissue regeneration and cell differentiation, the method comprising the steps of (a) providing a molecular model of the 3D structure atomic coordinates of PEPREF as defined in claim 1 and (b) identifying a candidate analog having a RMSD value of 2.45Å or less.

21. Kits for pharmaceutical, surgical, dermatological, prophylactic, diagnostic, or imaging functional association production, comprising at least one, preferably more than two, peptide or peptidomimetic according to any one of claims 1 to 13, functionalized biomaterial according to claim 14, medical composition according to claim 16, at least one bioactive carrier, each and every one of them provided in an amount effective to produce a pharmaceutical, surgical, dermatological, prophylactic, diagnostic, or imaging association to induce cell differentiation, promote tissue regeneration or protect a subject from a disease, disorder, pathology or condition as defined in claim 19, when administered in-vitro, ex-vivo or in-vivo to a mesenchymal stem cell, progenitor cell, at any stage of differentiation thereof, or to a subject carrying such a cell, and packaging and instructions.