Analysis performed: 190729_170309

• Analyzed sequences (hits resulting from 676 blast searches, 52 animal groups x 13 query sequences):49992 (out of which unique: 8666, programmatically recognized as VEGF/PDGF family members: 90.6%).
• Red dotted lines in the tree indicate paraphyletic relationships.

• The tree background color indicates the presence of the proteins with the corresponding color according to our hypotheses.

The red-to-white background of the table indicates a heuristic reliability of the results, where a brighter color indicates a higher reliability. This is calculated using the number of fully sequenced genomes, the number of species in the phylum and the number of protein sequences available for that phylum.
 The numbers in the table denote the number of: orthologs found (black), P = paralogs found, whose relationship could not be programmatically determined, Σ = total homologs found.

					•	ol. # unique blasthits es (excl. false pos.)	ts .		PDGF-A	PDGF-B	PDGF-C	PDGF-D	PIGF-1	VEGF-A121	VEGF-A165	VEGF-A206	VEGF-B167	VEGF-B186	VEGF-C	VEGF-D	VEGF-F
			55	5 6	3	0	ctenophora (comb jellies) porifera (sponges)												1 P0, ?7, Σ8	0 P1, ?1, Σ2	0 P0, ?3, Σ3
				36k		0	placozoa												1	· - / · - / - -	0 1 3 / 1 3 / 2 3
	3				5k 18	94 (94)	cnidaria (medusae/polyps)		0 P6, ?4, Σ10	1 P3, ?1, Σ5	0 P1, ?0, Σ1		0 P2, ?1, ∑3	0 P6, ?7, Σ13	1 P7, ?13, Σ21	0 P6, ?9, Σ15	0 P18, ?61, Σ79	0 P6, ?0, Σ6	11 P1, ?43, ∑55	0 P7, ?19, Σ26	0 P3, ?2, ∑5
				51 925		1 (0)	xenacoelomorpha														
		3	17	793 136	5k 11	42 (42)	echinodermata		0 P5, ?1, Σ6	0 P5, ?0, Σ5	0 P11, ?1, Σ12	0 P12, ?1, Σ13	0 P9, ?3, Σ12	3 P2, ?7, Σ12	3 P3, ?11, Σ17	3 P2, ?7, Σ12	0 P10, ?9, Σ19	0 P10, ?8, Σ18	2 P8, ?12, Σ22	1 P9, ?7, Σ17	0 P7, ?3, Σ10
)	39	9 23k	< 2	9 (6)	hemichordata (acorn wormws)		0 P2, ?0, Σ2	0 P2, ?0, Σ2	0 P2, ?0, Σ2	0 P2, ?0, Σ2	0 P1, ?0, Σ1	0 P1, ?1, Σ2	0 P1, ?1, Σ2	0 P1, ?1, ∑2	0 P2, ?1, Σ3	0 P2, ?1, Σ3	2 P1, ?1, Σ4	0 P3, ?1, Σ4	0 P2, ?0, Σ2
)	11	L 95k	4	20 (19)	cephalochordata (lancelets)		0 P6, ?1, Σ7	0 P6, ?1, Σ7	0 P5, ?1, Σ6	0 P5, ?1, Σ6	0 P5, ?0, Σ5	1 P5, ?1, Σ7	1 P5, ?1, Σ7	1 P5, ?1, Σ7	0 P6, ?2, Σ8	0 P6, ?1, Σ7	6 P1, ?5, Σ12	0 P6, ?1, Σ7	0 P6, ?1, Σ7
			36	51 64k	6	2 (1)	t tunicata		0 P1, ?0, Σ1	0 P1, ?0, Σ1			0 P1, ?0, Σ1	1 P0, ?0, Σ1	1 P0, ?0, Σ1	1 P0, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1
			····· 77	7 8k	3	0	cyclostomata (hagfish/lamprey)														
			82	27 115	5k 6	52 (52)	chondrichthyes (cartilaginous fis	shes)	6 P21, ?0, Σ27	2 P25, ?0, Σ27	2 P18, ?0, Σ20	2 P11, ?0, Σ13	0 P25, ?0, Σ25	11 P14, ?0, Σ25	11 P14, ?0, Σ25	11 P13, ?0, Σ24	0 P29, ?0, Σ29	0 P29, ?1, Σ30	6 P23, ?0, Σ29	2 P26, ?0, Σ28	0 P25, ?0, Σ25
			19	9069 2M	186	2134 (n.a.)	actinopterygii (ray-finned fishes)	;)	217 P665, ?170, Σ1052	27 P863, ?170, Σ1060	117 P282, ?15, Σ414	148 P269, ?9, Σ426	102 P882, ?159, Σ1143	426 P811, ?209, Σ1446	430 P462, ?137, Σ1029	433 P463, ?130, Σ1026	59 P1041, ?154, Σ1254	58 P1161, ?173, Σ1392	175 P1034, ?141, Σ1350	102 P1012, ?136, Σ1250	30 P1054, ?169, Σ1253
			2	35k	(1	31 (31)	coelacanthimorpha (lobe-finned	fishes)	1 P15, ?0, Σ16	2 P12, ?0, Σ14	1 P12, ?0, Σ13	2 P4, ?0, Σ6	2 P12, ?0, Σ14	3 P12, ?0, Σ15	3 P11, ?0, Σ14	3 P11, ?0, ∑14	3 P14, ?0, Σ17	3 P14, ?1, Σ18	2 P15, ?0, Σ17	1 P16, ?0, Σ17	0 P14, ?0, Σ14
			6	1k	0	10 (10)	dipnoi (lungfishes)		1 P3, ?0, Σ4	1 P3, ?0, Σ4	0 P4, ?0, Σ4	0 P4, ?0, Σ4	0 P4, ?0, Σ4	2 P2, ?0, Σ4	2 P2, ?0, Σ4		0 P4, ?0, Σ4	0 P4, ?0, Σ4	0 P4, ?0, Σ4	0 P4, ?0, Σ4	ο P4, ?2, Σ6
			56			144 (144)	amphibia		16 P59, ?1, Σ76	12 P62, ?1, Σ75	6 P54, ?0, Σ60	5 P17, ?0, Σ22	0 P66, ?1, Σ67	27 P38, ?1, Σ66	27 P30, ?1, Σ58	27 P33, ?1, Σ61	3 P69, ?1, Σ73	3 P73, ?1, Σ77	5 P71, ?1, Σ77	6 P72, ?1, Σ79	0 P68, ?1, Σ69
			94	156 3M	132	1551 (n.a.)	aves (birds)		127 P340, ?5, Σ472	118 P461, ?5, ∑584	98 P452, ?2, ∑552	154 P316, ?0, Σ470		140 P390, ?9, ∑539	141 P329, ?5, ∑475	141 P329, ?5, ∑475	0 P672, ?8, Σ680	0 P764, ?8, Σ772	130 P704, ?4, ∑838	96 P707, ?4, Σ807	1 P729, ?8, Σ738
			24		9k 4		crocodylia (crocodiles)		5 P26, ?0, Σ31	1 P14, ?0, Σ15	4 P35, ?0, Σ39	6 P21, ?0, Σ27	7 P46, ?0, Σ53	17 P40, ?0, Σ57	17 P35, ?0, Σ52	17 P29, ?0, Σ46	0 P57, ?0, Σ57	0 P63, ?0, Σ63	9 P54, ?0, Σ63	8 P55, ?0, Σ63	0 P53, ?0, Σ53
							lepidosauria excl. toxicofera (noi			6 P45, ?0, Σ51	3 P38, ?1, Σ42	5 P18, ?0, Σ23	6 P46, ?1, Σ53	26 P31, ?1, Σ58	26 P26, ?1, Σ53	26 P22, ?1, Σ49	2 P54, ?0, Σ56	2 P59, ?0, Σ61	7 P56, ?1, Σ64	5 P57, ?0, Σ62	4 P48, ?0, Σ52
						161 (161)	toxicofera (poisonous reptiles)		12 P122, ?0, Σ134	9 P113, ?0, Σ122	9 P89, ?0, Σ98	11 P26, ?0, Σ37	14 P91, ?28, Σ133	53 P63, ?29, Σ145	53 P43, ?29, Σ125	53 P45, ?28, Σ126	7 P109, ?26, Σ142	7 P120, ?26, Σ153	11 P108, ?26, Σ145	2 P119, ?23, Σ144	24 P107, ?5, Σ136
			35			188 (188)	testudines (turtles)		9 P65, ?1, Σ75	8 P66, ?1, Σ75	7 P60, ?7, Σ74	17 P20, ?0, Σ37	10 P61, ?1, Σ72	30 P48, ?1, Σ79	30 P52, ?4, Σ86	30 P36, ?1, Σ67	8 P65, ?1, Σ74	8 P88, ?2, Σ98	6 P91, ?2, Σ99	5 P92, ?1, Σ98	0 P70, ?1, Σ71
			23	26k 33 142		25 (25) 88 (88)	monotremata (egg-laying mamn metatheria (marsupials)	mais)	1 P6, ?0, Σ77 P36, ?0, Σ43	1 P5, ?0, Σ6 5 P36, ?0, Σ41	3 P10, ?0, Σ13 4 P33, ?0, Σ37	3 P10, ?0, Σ13 10 P16, ?0, Σ26	1 P5, ?0, Σ6 4 P25, ?0, Σ29	1 P6, ?0, Σ7 4 P28, ?0, Σ32	1 P6, ?0, Σ7 4 P22, ?0, Σ26	1 P6, ?0, Σ7 4 P22, ?0, Σ26	0 P8, ?0, Σ8 4 P32, ?0, Σ36	0 P8, ?0, Σ8 4 P36, ?0, Σ40	2 P6, ?0, Σ8 4 P35, ?0, Σ39	1 P7, ?0, Σ8 5 P34, ?0, Σ39	0 P6, ?0, Σ60 P39, ?0, Σ39
						2995 (n.a.)	eutheria (placentals)		247 P762, ?6, Σ1015	223 P892, ?13, Σ1128	218 P659, ?1, Σ878			434 P900, ?6, Σ1340	440 P862, ?6, Σ1308	440 P857, ?6, Σ1303	249 P1420, ?11, Σ1680	249 P1504, ?10, Σ1763	171 P1406, ?9, Σ1586	164 P1601, ?9, Σ1774	0 P1596, ?10, Σ1606
			19				tardigrada (water bears)		0 P1, ?3, Σ4	0 P3, ?1, Σ4					0 P0, ?6, Σ6				0 P2, ?2, Σ4		0 P2, ?1, Σ3
			94		1		onychophora (velvet worms)		, , , , , _	3	5	3	3	3 4 7 7 8		3, 3, 2	3	3	5	3	
			19	95 2k	0	0	pycnogonida (sea spiders)														
			10	0065 646	5k 27	103 (103)	arachnida (spiders)		2 P20, ?3, Σ25	0 P20, ?3, Σ23	0 P21, ?5, Σ26	0 P9, ?2, Σ11	2 P24, ?39, Σ65	14 P5, ?22, Σ41	14 P5, ?20, Σ39	13 P5, ?16, Σ34	0 P25, ?13, Σ38	0 P24, ?11, Σ35	1 P16, ?16, Σ33	1 P14, ?2, Σ17	1 P26, ?30, Σ57
			5	39k	< 1	41 (31)	xiphosura (horseshoe crabs)		0 P6, ?3, Σ9	0 P6, ?1, Σ7	0 P7, ?3, Σ10	0 P3, ?2, Σ5	0 P7, ?11, ∑18	7 P0, ?11, ∑18	7 P0, ?11, Σ18	7 P0, ?11, ∑18	0 P7, ?11, ∑18	0 P7, ?11, Σ18	0 P7, ?3, Σ10	0 P2, ?0, Σ2	0 P7, ?11, Σ18
			97	78 7k	1	1 (0)	myriapoda (millipeds)														
			10	947	7k 25	53 (52)	** crustacea		0 P10, ?8, Σ18	0 P11, ?4, Σ15	1 P4, ?3, Σ8	0 P1, ?8, Σ9	0 P5, ?7, Σ12	5 P4, ?11, Σ20	5 P4, ?12, Σ21	4 P4, ?8, Σ16	1 P9, ?19, Σ29	1 P6, ?18, Σ25	1 P8, ?13, Σ22	1 P6, ?8, Σ15	1 P7, ?9, Σ17
			11	L4414 7M	339	618 (n.a.)	hexapoda (insects)		20 P77, ?117, ∑214	3 P89, ?113, Σ205	1 P42, ?34, Σ77	2 P23, ?16, Σ41	3 P52, ?141, ∑196	49 P53, ?154, Σ256	59 P61, ?198, ∑318	39 P45, ?129, ∑213	5 P110, ?177, Σ292	5 P94, ?156, Σ255	16 P18, ?98, ∑132	2 P36, ?55, Σ93	3 P95, ?236, Σ334
			30	368	3 0	0	nematomorpha (horsehair worm	ns)													
			35	503 2M	100	44 (44)	nematoda (roundworms)		0 P0, ?35, ∑35	0 P0, ?11, Σ11							0 P1, ?22, Σ23	0 P0, ?21, Σ21	0 P0, ?4, Σ4	0 P0, ?2, Σ2	0 P0, ?24, Σ24
			7	21k	< 1	8 (1)	oriapulida (penis worms)		1 P0, ?0, Σ1	0 P1, ?0, Σ1					0 P1, ?0, Σ1		0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1		0 P1, ?0, Σ1
		•	1	1	0	0	loricifera														
					5 0		kinorhyncha (mud dragons)														
					0		chaetognatha (arrow worms)														
		_			0		bryozoa (moss animals)														
					5 0		entoprocta														
					3 0		cycliophora (symbion)		o DO 33 Z3	0 D2 22 54	0 D1 21 T2	0 D1 21 T2	0 D1 22 T2	0 DO 33 Z3	0 D0 33 Z3	0 D0 33 Z3	0 D1 22 T2	0 D1 21 T2	0 D0 33 Z3	0 P1 21 F2	o D1 22 52
					9k 5 2k 26		annelida (segmented worms) mollusca		0 P0, ?3, Σ30 P4, ?6, Σ10	0 P2, ?2, Σ4 0 P8, ?0, Σ8			0 P1, ?2, Σ30 P2, ?1, Σ3	0 P0, ?3, Σ3 2 P2, ?9, Σ13	0 P0, ?3, Σ3 2 P2, ?9, Σ13	0 P0, ?3, Σ3 2 P2, ?5, Σ9	0 P1, ?2, Σ30 P9, ?6, Σ15	0 P1, ?1, Σ20 P4, ?5, Σ9	0 P0, ?2, Σ2 0 P1, ?12, Σ13	0 P1, ?1, Σ2 0 P7, ?4, Σ11	0 P1, ?2, Σ30 P8, ?4, Σ12
					1		nemertea (ribbon worms)		0 14, 10, 210	0 10, :0, 20	0 14, 14, 20	0 11, :4, 23	0 12, :1, 23	2 12, : 3, 213	2 12, :3, 213	2 12, :3, 23	0 13, 10, 213	0 14, :3, 23	0 11, :12, 213	0 17, :4, 211	0 10, :4, 212
					(1		brachiopoda (lamp shells)		0 P1, ?0, Σ1	0 P1, ?0, Σ1		0 P1, ?0, Σ1		0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1	1 P0, ?0, Σ1	0 P1, ?0, Σ1			
					5 1		phoroniformea (horseshoe worm		, <u>, </u>	, , <u> </u>		, ,		, ., <u>.</u>		, -, -	, , ,	, -, <u>-</u> -			
		3			9 0		gastrotricha (hairybacks)														
)			lk 26		platyhelminthes (flatworms)														
					0		gnathostomulida (jaw worms)														
					0		micrognathozoa														
			23	37 64k	c 6		rotifera (wheel animals)		1 PO, ?O, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1		0 P1, ?0, Σ1		0 P1, ?0, Σ1		0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1	0 P1, ?0, Σ1
)	4	9k	1	1 (0)	orthonectida														
	L	3	24	150	0 0	0	dicyemida														