Analysis performed: 200805_065012

• Analyzed sequences (hits resulting from 714 blast searches, 51 animal groups x 14 query sequences):68459 (out of which unique: 8056, programmatically recognized as VEGF/PDGF family members: 90.0%).

• 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 of the number of protein sequences available for that phylum. • The numbers in the table denote the number of: orthologs found (black), P = paralogs found, ? = homologs found, whose relationship could not be programmatically determined, ∑ = total homologs found. # animal # se- # compl. # unique blasthits **VEGF-E VEGF-F PDGF-A PDGF-B PDGF-C PDGF-D** PIGF-1 VEGF-B167 **VEGF-B186 VEGF-C VEGF-D VEGF-A121** VEGF-A165 VEGF-A206 species quences genomes (excl. false pos.) ctenophora (comb jellies) 0 P1, ?1, ∑2 1 P0, ?7, ∑8 1455 29k porifera (sponges) 0 (0) placozoa 23k 1 P3, ?1, ∑5 0 P2, ?34, ∑36 0 P3, ?1, ∑4 105 (91) cnidaria (medusae/polyps) 0 P6, ?4, ∑10 0 P1, ?0, ∑1 0 P2, ?2, ∑4 0 P8, ?12, ∑20 1 P11, ?15, ∑27 0 P6, ?13, ∑19 0 P13, ?16, ∑29 0 P6, ?1, ∑7 16 P1, ?56, ∑73 1 P11, ?25, ∑37

xenacoelomorpha 0 P0, ?1, ∑1 0 P0, ?1, Σ 1 153 830 2 (-12) 4 P2, ?9, ∑15 38 (24) * echinodermata 0 P7, ?1, ∑8 0 P7, ?0, ∑7 0 P13, ?1, ∑14 0 P12, ?1, ∑13 0 P10, ?3, ∑13 4 P2, ?9, ∑15 4 P4, ?13, ∑21 0 P12, ?11, ∑23 0 P12, ?11, ∑23 3 P8, ?24, ∑35 1 P13, ?10, ∑24 0 P5, ?7, ∑12 0 P8, ?2, ∑10 1825 181k hemichordata (acorn wormws) 0 P2, ?0, ∑2 0 P2, ?0, ∑2 0 P2, ?1, ∑3 0 P2, ?1, ∑3 2 P1, ?1, ∑4 0 P3, ?1, ∑4 0 P2, ?1, ∑3 0 P2, ?0, ∑2 22k 8 (-7) 0 P2, ?0, ∑2 0 P1, ?0, ∑1 0 P1, ?2, ∑3 0 P1, ?1, ∑2 0 P1, ?1, ∑2 0 P2, ?2, ∑4 P6, ?1, ∑7 0 P6, ?1, ∑7 0 P5, ?1, ∑6 0 P5, ?1, ∑6 0 P5, ?0, ∑5 1 P5, ?1, ∑7 1 P5, ?1, ∑7 1 P5, ?1, ∑7 0 P6, ?2, ∑8 0 P6, ?1, ∑7 5 P1, ?4, ∑10 0 P6, ?1, ∑7 0 P3, ?4, ∑7 0 P6, ?1, ∑7 11 (-3) 62k cephalochordata (lancelets) P1, ?0, ∑1 0 P1, ?0, ∑1 0 P1, ?0, ∑1 2 (-12) 0 P1, ?1, ∑2 1 P0, ?0, ∑1 1 P0, ?0, ∑1 1 P0, ?0, ∑1 0 P1, ?0, ∑1 **f** tunicata 63k 0 P6, ?0, ∑6 0 P18, ?0, ∑18 P15, ?0, ∑18 0 P18, ?0, ∑18 1 P8, ?0, ∑9 0 P17, ?0, ∑17 13 P5, ?0, ∑18 1 P17, ?50, ∑68 0 P17, ?0, ∑17 0 P17, ?0, ∑17 68 (54) cyclostomata (hagfish/lamprey) 13 P5, ?0, ∑18 13 P4, ?0, ∑17 0 P17, ?0, ∑17 0 P18, ?0, ∑18 37k 15 P42, ?1, ∑58 0 P46, ?7, ∑53 72 (58) 5 P48, ?1, ∑54 5 P35, ?0, ∑40 6 P23, ?0, ∑29 1 P48, ?2, ∑51 16 P36, ?2, ∑54 17 P35, ?2, ∑54 17 P28, ?5, ∑50 0 P61, ?1, ∑62 0 P63, ?2, ∑65 13 P44, ?1, ∑58 4 P52, ?1, ∑57 0 P52, ?1, ∑53 853 173k chondrichthyes (cartilaginous fishes) 47 P1207, ?252, ∑1506 162 P373, ?28, ∑563 193 P347, ?10, ∑550 670 P701, ?201, ∑1572 91 P1542, ?234, ∑1867 90 P1720, ?264, ∑2074 157 P1537, ?203, ∑1897 0 P1518, ?262, ∑1780 44 P1561, ?256, ∑1861 300 P959, ?256, ∑1515 154 P1305, ?252, ∑173 662 P829, ?248, ∑1739 276 P1525, ?227, ∑2028 406 2371 (n.a.) actinopterygii (ray-finned fishes) 2 P12, ?0, ∑14 2 P4, ?0, ∑6 P15, ?0, ∑16 2 P12, ?0, ∑14 3 P12, ?0, ∑15 coelacanthimorpha (lobe-finned fishes) 1 P12, ?0, ∑13 3 P11, ?0, ∑14 3 P11, ?0, ∑14 3 P14, ?0, ∑17 3 P14, ?1, ∑18 2 P15, ?0, ∑17 1 P16, ?0, ∑17 0 P14, ?0, ∑14 0 P14, ?0, ∑14 30k o P4, ?0, Σ4 0 P4, ?2, ∑6 dipnoi (lungfishes) P3, ?0, ∑4 1 P3, ?0, ∑4 o P4, ?0, ∑4 0 P4, ?0, ∑4 2 P2, ?0, ∑4 2 P2, ?0, ∑4 2 P2, ?0, ∑4 0 P4, ?0, ∑4 o P4, ?0, Σ4 o P4, ?0, Σ4 0 P4, ?0, ∑4 6 (-8) 0 P4, ?0, Σ4 26 P77, ?1, ∑104 9 P97, ?3, ∑109 9 P96, ?1, ∑106 8 P95, ?1, ∑104 17 P87, ?0, ∑104 6 P58, ?0, ∑64 6 P20, ?0, ∑26 0 P86, ?5, ∑91 28 P53, ?5, ∑86 28 P41, ?5, ∑74 28 P48, ?5, ∑81 9 P92, ?1, ∑102 0 P100, ?1, ∑101 4 P96, ?1, ∑101 116 (102) 415k 22 **a**mphibia 134 P566, ?3, ∑703 192 P395, ?4, ∑591 145 P383, ?5, ∑533 131 P543, ?5, ∑679 108 P530, ?0, ∑638 190 P348, ?0, ∑538 191 P443, ?8, ∑642 112 P891, ?3, ∑1006 0 P830, ?7, ∑837 1 P831, ?7, ∑839 192 P393, ?4, ∑589 0 P822, ?7, ∑829 0 P924, ?7, ∑931 155 P811, ?3, ∑969 1179 (n.a.) aves (birds) 7 P46, ?0, ∑53 9 P54, ?0, ∑63 6 P21, ?0, ∑27 P46, ?0, ∑53 5 P52, ?0, ∑57 4 P35, ?0, ∑39 17 P40, ?0, ∑57 17 P35, ?0, ∑52 17 P29, ?0, ∑46 0 P57, ?0, ∑57 0 P63, ?0, ∑63 8 P55, ?0, ∑63 0 P53, ?0, ∑53 0 P53, ?0, ∑53 crocodylia (crocodiles) 141k 8 20 P41, ?0, ∑61 18 P190, ?0, ∑208 20 P180, ?0, ∑200 14 P128, ?0, ∑142 22 P167, ?31, ∑220 91 P107, ?32, ∑230 91 P76, ?31, ∑198 91 P79, ?31, ∑201 0 P197, ?26, ∑223 28 P179, ?7, ∑214 12 P188, ?26, ∑226 12 P203, ?26, ∑241 21 P195, ?29, ∑245 9 P212, ?23, ∑244 lepidosauria (lizards & snakes) 14 P97, ?1, ∑112 22 P27, ?0, ∑49 276k 25 159 (142) testudines (turtles) 11 P100, ?1, ∑112 9 P79, ?10, ∑98 13 P93, ?2, ∑108 38 P78, ?2, ∑118 38 P56, ?2, ∑96 13 P98, ?1, ∑112 11 P134, ?1, ∑146 0 P105, ?8, ∑113 1 P110, ?1, ∑112 38 P58, ?2, ∑98 13 P127, ?4, ∑144 12 P132, ?2, ∑146 P12, ?0, ∑13 P10, ?0, ∑11 P13, ?0, ∑14 P13, ?0, ∑14 0 P14, ?0, ∑14 P18, ?0, ∑18 P14, ?0, ∑18 36k 4 344 154k 15 **54** (40) metatheria (marsupials) P35, ?0, ∑44 6 P35, ?0, ∑41 4 P34, ?0, ∑38 10 P13, ?0, ∑23 6 P34, ?0, ∑40 5 P39, ?0, **∑**44 5 P24, ?0, ∑29 5 P24, ?0, ∑29 5 P38, ?0, ∑43 5 P49, ?0, ∑54 4 P50, ?0, ∑54 5 P49, ?0, ∑54 0 P36, ?0, ∑36 0 P40, ?0, ∑40 258 P456, ?0, ∑714 298 P850, ?11, ∑1159 232 P909, ?15, ∑1156 221 P651, ?2, ∑874 298 P1452, ?12, ∑1762 484 P1040, ?11, ∑1535 491 P1010, ?11, ∑1512 491 P1010, ?11, ∑1512 302 P1652, ?13, ∑1967 301 P1730, ?13, ∑2044 199 P1615, ?12, ∑1826 203 P1799, ?12, ∑2014 0 P1913, ?16, ∑1929 0 P1829, ?13, ∑1842 └─○ 4924 7M 1010 **2577** (n.a.) eutheria (placentals) 0 P3, ?1, ∑4 0 P2, ?2, ∑4 0 P3, ?1, ∑4 225 45k 7 (-7) 0 P1, ?3, ∑4 0 P3, ?1, ∑4 0 P2, ?0, ∑2 0 P2, ?0, ∑2 0 P0, ?4, ∑4 0 P0, ?6, ∑6 0 P0, ?3, ∑3 0 P4, ?0, ∑4 0 P4, ?0, ∑4 0 P2, ?1, ∑3 tardigrada (water bears) 0 P1, ?0, ∑1 0 (0) onychophora (velvet worms) 223 1k 0 (0) pycnogonida (sea spiders) 11020 912k 42 **95 (81)** arachnida (spiders) 2 P21, ?6, ∑29 0 P26, ?4, ∑30 0 P23, ?2, ∑25 0 P7, ?2, ∑9 2 P25, ?25, ∑52 17 P8, ?28, ∑53 19 P8, ?26, ∑53 17 P8, ?22, ∑47 0 P38, ?18, ∑56 0 P36, ?18, ∑54 1 P17, ?21, ∑39 1 P17, ?5, ∑23 0 P18, ?34, ∑52 1 P33, ?34, ∑68 22 (8) xiphosura (horseshoe crabs) 0 P6, ?3, ∑9 0 P6, ?1, ∑7 0 P7, ?3, ∑10 0 P3, ?2, ∑5 0 P7, ?10, ∑17 7 P0, ?11, ∑18 7 P0, ?11, ∑18 7 P0, ?11, ∑18 0 P7, ?11, ∑18 0 P7, ?11, ∑18 0 P7, ?4, ∑11 0 P2, ?0, ∑2 0 P6, ?11, ∑17 0 P7, ?11, ∑18 32k 1 (-13) myriapoda (millipeds) 0 P0, ?1, ∑1 ****** crustacea 11723 1M 68 (54) 0 P14, ?14, ∑28 0 P16, ?12, ∑28 P7, ?7, ∑15 0 P6, ?9, ∑15 0 P8, ?11, ∑19 5 P8, ?18, ∑31 6 P8, ?21, ∑35 5 P7, ?14, ∑26 2 P12, ?29, ∑43 2 P10, ?28, ∑40 3 P9, ?16, ∑28 1 P9, ?11, ∑21 0 P6, ?29, ∑35 2 P10, ?16, ∑28 45 123334 6M 630 (n.a.) 20 P91, ?138, ∑249 P105, ?131, ∑240 P45, ?37, ∑83 2 P23, ?17, ∑42 P63, ?160, ∑226 62 P60, ?177, ∑299 75 P72, ?231, ∑378 48 P45, ?140, ∑233 5 P134, ?212, ∑351 5 P110, ?180, ∑295 19 P23, ?106, ∑148 4 P42, ?57, ∑103 o P37, ?269, ∑306 4 P114, ?279, ∑397 hexapoda (insects) 797 225 nematomorpha (horsehair worms) 0 (0) 0 P0, ?35, ∑35 0 P0, ?11, ∑11 0 P1, ?22, ∑23 0 P0, ?21, ∑21 0 P0, ?4, ∑4 0 P0, ?2, ∑2 0 P0, ?24, ∑24 194 45 (31) 3745 1M nematoda (roundworms) 1 P0, ?0, ∑1 0 P1, ?0, ∑1 1 (-13) priapulida (penis worms) 19k loricifera 0 (0) kinorhyncha (mud dragons) 96 0 (0) / chaetognatha (arrow worms) 0 (0) bryozoa (moss animals) 0 P0, ?1, ∑1 1 (-13) 0 P0, ?1, ∑1 entoprocta 123 1 (-13) cycliophora (symbion) 0 (0) 0 P0, ?3, ∑3 0 P2, ?2, ∑4 0 P1, ?1, ∑2 0 P1, ?1, ∑2 0 P1, ?2, ∑3 0 P1, ?1, ∑2 0 P1, ?1, ∑2 0 P1, ?2, ∑3 3616 79k 6 (-8) 0 P0, ?3, ∑3 0 P0, ?3, ∑3 0 P0, ?3, ∑3 0 P1, ?2, ∑3 0 P1, ?1, ∑2 0 P0, ?3, ∑3 annelida (segmented worms) 14931 630k 55 **32 (18)** 0 P8, ?0, ∑8 mollusca 1 P5, ?6, ∑12 0 P5, ?3, ∑8 0 P1, ?4, ∑5 0 P2, ?1, ∑3 2 P3, ?9, ∑14 2 P3, ?9, ∑14 2 P3, ?5, ∑10 0 P5, ?6, ∑11 0 P2, ?16, ∑18 1 P7, ?4, ∑12 0 P9, ?6, ∑15 0 P10, ?4, ∑14 0 P10, ?6, ∑16 272 2k 1 0 (0) nemertea (ribbon worms) 5 (-10) brachiopoda (lamp shells) 0 P1, ?0, ∑1 35k 0 P0, ?1, Σ 1 0 P1, ?0, Σ 1 0 P1, ?0, ∑1 0 P1, ?0, ∑1 0 P1, ?0, ∑1 0 P1, ?1, ∑2 0 P1, ?0, ∑1 0 P1, ?2, ∑3 1 P0, ?0, ∑1 0 P1, ?0, ∑1 0 P1, ?0, ∑1 --- 13 182 1 0 (0) phoroniformea (horseshoe worms) 134 271 gastrotricha (hairybacks) 0 (0) 4732 616k platyhelminthes (flatworms) 0 (0) 55 21 50 0 0 (0) gnathostomulida (jaw worms) micrognathozoa 0 (0) 1 P0, ?0, ∑1 0 P1, ?0, ∑1 0 P1, ?1, ∑2 0 P1, ?0, ∑1 0 P1, ?1, ∑2 0 P1, ?0, ∑1 0 P1, ?0, ∑1 246 60k 19 **3 (-12)** rotifera (wheel animals)

0 P0, ?1, ∑1

Force topology is enabled!
Branch lengths do not represent real values.

1 (-13)

9k

24 161 1 0 (0)

orthonectida

dicyemida