```
Deuterostome_chordata_Ggallus_tr_F1NMN7_F1NMN7_CHICK_Aldedh_domain_containing_protein_OS_Gallus_gallus_OX_9031_GN_ALDH9A1_PE_3_SV_4_62
                                                  Deuterostome_chordata_Xtro_tr_F6VC33_F6VC33_XENTR_Aldehyde_dehydrogenase_9_family_member_A1_OS Xenopus tropicalis OX 8364 GN aldh9a1 PE 3 SV 3 131
                                        Deutero Chord Hsap sp P49189 AL9A1 HUMAN 4 trimethylaminobutyraldehyde dehydrogenase OS Homo sapiens Human OX 9606 GN ALDH9A1 PE 1 SV 3 82
                                            Deuterostome_chordata_PetMar_MSTRG_7992_1_p1 102
                              95.6/100
                                               Deuterostome chordata PetMar MSTRG 7992 2 p1 103
                                               Deuterostome chordata PetMar MSTRG 7992 3 p1 104
                                            100/100 Deuterostome_chordata_PetMar_PMZ_0014455_RA_p1_105
                                           - Cnidar NemVecNVEC200 011176 1 1 protein AED 0 20 eAED 0 20 QI 256 1 1 1 1 1 7 1044 523 192
                               92.8/84
                                                  - Protost ecdv Dappu tr E9GF07 E9GF07 DAPPU Aldedh domain containing protein OS Daphnia pulex_OX_6669_GN_DAPPUDRAFT_302871_PE_3_SV_1_255
                                         Deutero Ambulac Sakowv30005860m 16
                                           Deutero Cephalo 070630R t1 name chr scaffold16 start 2421331 end 2428125 strand pro len 540 45
                              93.1/80
                                               Deutero Urochord tr F6YJQ7 F6YJQ7 CIOIN Aldedh domain containing protein OS CioInt 459
                                                   Protost_Lop_OctVul6B029776P1_318
                                                     Protost Lop OctVul6B029776P2 319
                                                   Protost_Lopo_BGLB003476_PB_pep_scaffold_BglaB1_LG8_random_Scaffold135_125667_135496__1_gene_BGLB003476_transcript_BGLB003476_RB_gene_biotype_protein_coding_transcript_biotype_protein_coding_322
                                                     Protost Lopo BGLB003476 PC pep scaffold BglaB1 LG8 random Scaffold135 125667 135618 1 gene BGLB003476 transcript BGLB003476 RC gene biotype protein coding transcript biotype protein coding 323

    Lopo CAL1535845 1 Lymnaea stagnalis This study

                                           Protost_Lopo_HolozoaMetazoaBilatEP00105Crassostreagigas_P037709_XP_019921857_1_PREDICTED_4-trimethylaminobutyraldehyde_dehydrogenase_ 397
                                               rotost Lopo HolozoaMetazoaBilatEP00105Crassostreagigas P039744 XP 019923892 1 PREDICTED 4-trimethylaminobutyraldehyde dehydrogenase partial 404
                                        Protostome Jopho Pdum Contig17817 418
                                            Lopo tr R7UVK5 R7UVK5 CAPTE Aldedh domain containing protein OS Capitella teleta OX 283909 GN CAPTEDRAFT 176705 PE 3 SV 1 372
                                      Deutero Ambulac Apla gbr322 16 t1 6
                       31.7/89
                                                      Protost_ecdy_PriCa_ecdy_XP_014675875_1__PREDICTED__aldehyde__dehydrogenase__family__9__member__A1_A_like__Priapulus__caudatus__278
                                           Cnidar_HydEchina_TRINITY_DN35784_c0_g1_i1_p1__TRINITY_DN35784_c0_g1__TRINITY_DN35784_c0_g1_i1_p1__ORF__type_complete__len_546___score_100_49__TRINITY_DN35784_c0_g1_i1_70_1638 149
                                               idar_HydEchina_TRINITY_DN35784_c0_g1_i3_p1__TRINITY_DN35784_c0_g1__TRINITY_DN35784_c0_g1_i3_p1__ORF__type_complete__len_542___score_100_47__TRINITY_DN35784_c0_g1_i3_58_1626__151_
                                         Chidar_HydEchina_IRINITY_DN35784_cu_gi_is_pi__ininitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit_DN35784_cu_gi__itunitit
                                          - Protost ecdy Cele tr Q20352 Q20352 CAEEL Aldedh domain containing protein OS Caenorhabditis elegans OX 6239 GN alh 11 PE 1 SV 1 237
                       99.6/100
                                             Protost_ecdy_Cele_tr_Q7Z1Q3_Q7Z1Q3_CAEEL_Aldedh_domain_containing_protein_OS_Caenorhabditis_elegans_OX 6239 GN alh 12 PE 1 SV 1 239
                                       Deutero Urochord tr F6S8U4 F6S8U4 CIOIN Uncharacterized protein OS CioInt 452
                                  Deuterostome_chordata_Ggallus_tr_F1P4K4_F1P4K4_CHICK_Aldedh_domain_containing_protein_OS_Gallus_gallus_OX_9031_GN_ALDH8A1_PE_3_SV_2 63
                                            Deutero_Chord_Hsap_sp_Q9H2A2_AL8A1_HUMAN_2_aminomuconic_semialdehyde_dehydrogenase_OS_Homo_sapiens__Human__OX_9606_GN_ALDH8A1_PE_1_SV_1_89
                                 Deuterostome_chordata_Xtro_tr_F6UH88_F6UH88_XENTR_Aldehyde_dehydrogenase_8_family_member_A1_OS_Xenopus_tropicalis_OX_8364_GN_aldh8a1_PE_3_SV 4 127
                                           Deuterostome_chordata_PetMar_PMZ_0003669_RA_p1_101
                100/10
                                               Deuterostome_chordata_PetMar_PMZ_0037605_RA_p1_121
                                             Cnidar NemVecNVEC200 013606 1 1 protein AED 0 34 eAED 0 34 QI 34 1 1 1 1 1 6 527 323 195
                                        Deutero Cephalo 178070R_t1 name chr_scaffold37_start 2595307_end_2610124_strand pro_len_501__37
                                                     Cnidar HydEchina TRINITY DN8514 c0 g1 i1 p1 TRINITY DN8514 c0 g1 TRINITY DN8514 c0 g1 i1 p1 ORF type complete len 483 score 96 38 TRINITY DN8514 c0 g1 i1 67 1515 172
                              98.5/97
                                                       - Cnidar HydraVulSc4wPfr 570 g25934 t1 187
                                                              - Protost ecdy Cele tr Q18822 Q18822 CAEEL Aldedh domain containing protein OS Caenorhabditis elegans OX 6239 GN alh 10 PE 1 SV 1 236
                                       83.3/97

    Protost_ecdy_Dappu_tr_E9GUJ9_E9GUJ9_DAPPU_Aldedh_domain_containing_protein_OS_Daphnia_pulex_OX_6669_GN_DAPPUDRAFT_128869_PE_3_SV_1_249

                                           88.3/100
                                                                    - Protost ecdy PriCa ecdy XP 014664737 1 PREDICTED aldehyde dehydrogenase family 8 member A1 like Priapulus caudatus 268
                       85.3/96
                                                     Lopo tr R7VGQ8 R7VGQ8 CAPTE Aldedh domain containing protein OS Capitella teleta OX 283909 GN CAPTEDRAFT 108889 PE 4 SV 1 355
       76.4/86
                                        Lopo_tr_R7T5W1_R7T5W1_CAPTE_Aldedh_domain_containing_protein_OS_Capitella_teleta_OX_283909_GN_CAPTEDRAFT_109073_PE_3_SV_1_362
                                               Lopo_tr_R7VHM6_R7VHM6_CAPTE_Aldedh_domain_containing_protein_OS_Capitella_teleta_OX_283909_GN_CAPTEDRAFT_159159_PE_3_SV_1_374
                                                      opo tr R7VF34 R7VF34 CAPTE Aldedh domain containing protein OS Capitella teleta OX 283909 GN CAPTEDRAFT 228352 PE 3 SV 1 371
                                                  Protostome lopho Pdum comp412481 c0 seg7 427
                                                 Protost_Lopo_BGLB013136_PB_pep_scaffold_BglaB1_LGUN_random_Scaffold7622_2804_13016_1_gene_BGLB013136_transcript_BGLB013136_RB_gene_biotype_protein_coding_transcript_biotype_protein_coding_334
                                                 Lopo CAL1546061 1 Lymnaea stagnalis This study
                                     97.8/98
                                              Protost Lopo HolozoaMetazoaBilatEP00105Crassostreagigas_P031910_XP_011454749_1_PREDICTED_aldehyde_dehydrogenase_family_8_member_A1__392
                                   5.9/61
                                              Deutero_Ambulac_Apla_gbr14_137_t1_0
                                     77.7/94
                                               Deutero Ambulac Sakowv30001002m 14
                                       Lopo_tr_R7V0K9_R7V0K9_CAPTE_Aldedh_domain_containing_protein_OS_Capitella_teleta_OX_283909_GN_CAPTEDRAFT_212933_PE_3_SV_1_363
                           100/100
                                                                                 Aldehyde dehydrogenase 16 (ALDH16A1) Bilaterian+non bilaterian
                    100/100
                                                                        Succinate semialdehyde dehydrogenase Bilaterian+non bilaterian
      100/100
                                                Retinal dehydrogenase 16 (ALDH1A1+ALDH1A2) Bilaterian+non bilaterian
97.9/100 100/100
                                   Cytosolic formyltetrahydrofolate dehydrogenase ALDH1L1
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