# Supplementary file 6

**Table S6. Protein sequences of *O. vulgaris* homologs used in phylogenetic tree reconstruction**

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| *Ov*-ELAV | MDSQIIQQNGGNHSPISTGTQMDDRDNVSKTNLIVNYLPQTMTQEEIRSLFASIGEVESCKLIRDKPTAMNTLRQNDLDQGLPETANTDFHCDLLPAARNASTDAEKCQSLGYGFVNYKYPSDAEKAINTLNGLRLQNKTIKVSYARPSSESIKGANLYISGLPKSFTQLDLEKLFSQCGFIITSRILYDNNTGLSKGVGFIRFDQRIEAERAIQKLHGTIPEGATEPITVKFANSPSSNKNAVPLALAASYLSPSRRIFGPIHHAAGRFRYSPLEASLLPGTILPGNALNGTGWCIFVYNLAPDTEDDVLWRLFGPFGAVQNVKVIRDFQTQKCKGYGFVTMTNYEEALMAIQTLNGFLLGTRVLQVSFKTNSRKS |
| *Ov*-ELAV-like1 | MEMDNKRTNLIINYIPQTLTDEEFRSMFLSIGPIKSAKIVRDKATGYSYGFGFVDYENVEDAQRAMQTLNGLQMQNKTIKVALARPGGEEIKGANLYVRNLPRHYQQMDLERLFQQFGTIIQSRVLTDQATGVSKGVGFVLFDQKKQAEEAINQITGTVPAGGTEALLIKFADDNAKKVRPPAMPYINTAPCFPAPGPMRSPGNRFRYNPVTGNYSTPNSGLSLSQGGYVIFVYNIGASSCEKTLWQLFSPFGTVQKVNIMRDHQKGQSKNYGFVTMTNLQEAQNAIARLNGYDYAGCGRPLQVKFKN |
| *Ov*-ELAV-like1B | MATEDHCEDNGGNLTNLIVNYIPQSLSNEEFRAMFLTIGPIKSSKIIQDRATGYSYGFGFVDYEHPEDAARAVQTLNGLHIENKRIKVALARPSGLGVKGANVYVSHLPNHYAQSDLVKLFEPYGIIIRSRIMTHPNTNQSKGVGFVLYDQKKMAEAAIADLNQTIPPGGSEPIIVKFANEAPNSKKTRPPHEQYMNNNNSIQQTFSTPMLMRNERFTSPVPVNYSPNNPNPNPNNDMSNSPVLFIYNTGNMDESDLGQLFCGFGTVQKANIVRVHQKTKGYGFVTMANQHEAENAVGRLNGYRYRGWGPLQVSFKNK |
| *Ov*-PolyA\_binding\_1-like | MNPTAPNYPMASLYVGDLHPDVTEALLFEKFSSAGPVTSIRVCRDMIARRSLGYAYVNFQQPADAERALDTMNFDAIKGRPIRIMWSQRDPSLRKSGLGNVFIKNLDKSIDNKALYDTFSAFGNILSCKIVSDESGSKGYGFVHFETGEAARCAIEKVNGMLLNGKKVYVGKFIPRRERMQQLGDKYKKFTNVYVKNFNDDLDDDKLRQVFEKFGKIASAKVMKDETGKSKGFGFVSFEEAEAAEAAVNEINGMDMNGRILYAGRAQKKAERQAELKEKFEKIKMERINRYQGVNLYVKNLDDAIDDERLRKEFSQFGTITSARVMTENGRSRGFGFVCFSSPEEATKAVTEMNGRILVFKPLYVALAQQKEERKAQLASQYIQRIQTIRNPLSSINTIFQASNPTSYFVPTMPQQRYYPSPITQLRAPGPRWQSIRPASAQQAAAYPPLATQQMRQTRPTGAQSTVRSNLGSRPITGQTGQRMAVPPSVTGRQTTNMQSQNSRANFKFGPMRPLGPMGTMQSMLGQPTAQQPVVVHGQEPLTSGMLAAAPPQEQKQMLGETLFPLIHGMYPDMAGKITGMLLEIDNSELLHMIDSHESLQAKVEEALAVLQAHQAKEAAATNAGVVKKD |
| *Ov*-NEUROD | MQMFRMPIKSLETEDEMCFGDSSSELLGDGSLLDDTCSEDDLDDYGSEPEDCLEGMTGNEDEQEMSDTKMKKSAKNYPYRRKKEEKPSSKDKNEPRLPKKRGPKKKRMTKARVQKLRLRRVKANARERNRMHGLNDALDTLRLHVPCTSKTQKLSKIETLRLARNYISALGEILKNGTKPDGVSFAKALSKGLSQNTMNLVAGCLQLNPRTLHPDSTLPKTYQYDFSSQIDFGSAVTQIPYPPSSYATTLHHHHHPP |
| *Ov*-NGN | MVMYLNKEVLLGPVSCVDMTGASVKLEPAISDIVSLSVPSSTHSMLTTTTTTIGAITTATTTTTTADFSLSGVLDVVDNVDVKVSSGFSWSNPGALSSVIHSPSSVQSPTLSPESPTTNAFHVDDHLLYNHSQHQNQNIHHRYQPLYPRPEKSMELSTVVDSPLSVSTPSSPSSSSSSSSSSSSSSSSLISSPYSSSSLSFSPLYTGDHKVPALKSNLQQLLPQNQPQNERQPESQLQQESKPQPQQQPDMKAAVACPVLLPTSAAQCKDTVVPTNSINTTAETTTTTASSSSSSSLAAPRTKATTTRRKITEMTKATRPPIISRSPPTSSSSSSSSSSLSSSSPLTSRASPLSSSSPPSSIPIISSSTDSVDGLKRKQVSPEKNCGAKRRNGPTAKKKRYTKSRIRNCNPLIVMKIKRNRRMKANDRERSRMHSLNDALDCLREVLPNYSDEGKLTKIETLRFAHNYIWTLSEALKLMDTAESKGEFGDIPEKLATLGLFARLSQHKHHHHYHHHHHHRQQLQQHPLQLQPQPQQQPLLQRPQPPQQQQVVLQQQSLQLQPKLQPTQPQQPLPHLLPPLVPPPAQQLPLSQLLPTPTPTSPPPPPHQQQQQQVLLANEIEMEEDDEKDVVKSENDDDDDDDDEDEDDDDEDEDDDDDDDGDDDGGDDESDRLLKRVTDTSFLQDFLMSQENEPVTTSGYRQEPNRFRHHHRHHHHHHHHRRLLRREANNYNDGDAVANSNGNSSPLYAPGIYGDYGNKIHAINNNNNNSDMEVTSSSSSSSGGGSRSGCCCSSSSSSSGCGGCSCCISNSSDSGSSSSISSSNSRSRSSSVSSGGSGGSNDNLADSATGVRSSNGTNSPSAPVHDRRPRRNHHHHHHHHHHHPYQLPQHQYHQHQHQPKQQLTKQPQHHHLYFQQQQHQLTVEPEQNESLHFSTDFSTPKSNFDVQDDHFVELTKL |
| *Ov*-ASCL1 | MTAALVPEPMVVESTLTSSATTTTTTATAMMAATTTTNAFSTTAKAFSTTTAVAATNGFPTTTTTAATTNSTTTTTTPNSKSVRTISMKENARELMNCKRRLDFNHTNYLPLHRPQTVAVARRNERERNRVKLINMTFATLREHIPNGPKGSKNKKMSKVETLRAAIDYIHYLQDLVEDSDTVNTIFDSSCLTAAGLTAAGLTNGIYQTTAMNSPRPSSCSDSSYEGLSAEEEELLGFTKWF |
| *Ov*-SOXB1 | METDLSKSSLAPGSGPQSLGQQSNPGANGQGNQGASQSQKNNQDRVKRPMNAFMVWSRGQRRKMAQENPKMHNSEISKRLGAEWKLLSESEKRPFIDEAKRLRAIHMKEHPDYKYRPRRKTKTLMKKDKYAIPGMPPGAPVQQVGREMYQMNGYMPNGYPMMPPDPNAYHQHMSNPMLGGQYGYNIPTQPMSTQMTTGSYMNGSSSYTMTMAPYSMSPSQVPQIKREPNPTGQPSPANRCPTGDLREMISMYLPGDNTPDHTVQSRLQMQTQYAHATTTEGGVNNTVPLTHM |
| *Ov*-SOXB2 | MSKPQAEHVKRPMNAFMVWSRGQRRKMAQENPKMHNSEISKRLGAEWKLLSEEEKRPFIDEAKRLRALHMKEHPDYKYRPRRKPKSLLKKDNKYAFPIPVLPGMNTFGAVPSFSPGSQDSLLASNFGEKARAFLPPTSTTHALYSHLAENAKMDSPLNIRPHELNGASGLYSPYMTSHSSLGSLPPAAHTHSGLTGQYLLPCCPPPYMPSQDLHRPVAYVLVKPEDHYRHTVI |
| *Ov*-SOX11-like | MVPQNTTLVADPTSSSFNQSVMFGSQLVDPGSHTPYTDATNCKKSSSHVKRPMNAFMVWSQIERRKISEVQPDMHNAEISKRLGRQWKLLNEHDRKPFVDEAERLRVLHLQEYPDYKYRPRKKAKLSGKAEGSNNTSNASSVGTTSTSKISKGPGHKTHKTEKNSSNKHRTNGGGGVVKSSNGLSSNGHTSNTANRLKLKLTIDKKFKESIKASKHVSVPSSQLTPPAKVPSSPSLYAPPTPEAVSFYPEEAFETPAASPQELNCVTNATVAGAASAGAFQVISSTQLTATAVDGKLLYQSAQIGGTTTSLPTSTALAALATAGTGAAMVGQQHLSLTGQQTTTDQHQHQHQLQQLQQQQQHNQHMDSVPLADLDSLTDVLQLPNNWHLELGNLDLSKLADAEFNLDMQNQNTPNASHFEFPDYSTPEVTEMIEADWLESGLGTLICKQ |
| *Ov*-SOX5-like | MLSTTSPALSTPVISQSCSSSKISSPISVESRRVSSSPHIATSPYHLTAPSIPRTLPSPSLQHHSPVSSPHANPAMATTATAVQANNIWANNSTGYNSSVAVAAAAAVAAAAAAAASDQDMPLNLSKPRYEMKLEKSSSEDSVNLSASQSKVEAIITPPPAHSNHQQRLPLTSSPTEMSALVGSRTPFGVAPPPQYVSSPYLGLPNHAAVPVGLSLNNLSPHTTSLNGKPSPSESEKDFFYSQDSLVQEVLVRQLSQNVNNQVFPMHLPMYAVPSTTMPQLSQLAACKDNRVMMPAEMSHEENHTYVQHLQSKMFGAKIIRAHKEKPDPSKPHVKRPMNAFMVWAREERRKILKACPDMHNSNISKILGAKWKAMSNAEKQPYYEEQSRLSKLHMEKHPDYRYRPRPKRTCIVDGKKLRISEYKALMKSRRQDIRRVWYNESGTTYVEGSENSSPYDTNQLLGSNMSGKDGKDSEFQGKLKSDETNSEDGDGSDINDIMSDVSLDASYSTAGSNSSHMQLGEVAASVS |
| *Ov*-SOX9-like | MSDTEESRGSPGEHSSPDTCGMEDSMSGSGLFSADHRFPQQIQDAVSQVLKGYDWTLVSMPSRTNGGEKRKPHIKRPMNAFMVWAQAARRKLADQYPHLHNAELSKTLGKLWRLLNEKEKRPFIDEAERLRVQHKKDYPDYKYQPRRRKPLKTSGVSNSGSVDVQHHLPPGMMLKSLQNSPTPHMSDGESSNCSSPHNGSHGPPTPPTTPNQQELIKCMADRSRLRSMGGLHSQAHPIDFSRVDLRELGNEVMSLDNIDDHELDQYLAMNPGAILSHQHNVAAAAAAATAAAAAQSDNGYTCYNQVSPTAVSTAPTWTSNYRVSASACVQPFNNGSPTSIPYDLSSQQQQQQQQCF |
| *Ov*-TCF1-like2 | MPHVSSGGSEDFFSKDEVKVYKDEGEEEKRSSENLSEDKLGLVTESEEGKNSSLPGQSYPGGEKSNTSGRPEDDKVVSQHPADRGIGPIPGYVVSPYPYPNGASVPASLGGKMSMVQPPLASLMMYNNDYSQPPPAHMGIPPVHIDPKTGLPRPPMYGYPAPPGQFPHPIYGPDFPQVQWQRPPGYPISSGAFSGPYPPSLINTSPLTRFGPPSLLPPPGLPHPGIPHPAIVTAGPKQEVMSHSQDNHRHSLQEQSSSHASEAQTAGDKKKPHIKKPLNAFMLFMKEMRPKVVAECTLKESAAINQILGRKWHALDRAEQAKYYEMARKEKELHMQLYPGWSARDNYASHTKKKKRKRETTGEDEAKARLPWYFNDVTTDSITAEGSSGGDSYQWERTRPSIIECSNPKKCRARFGLDQQNQWCKPCRSMHEKCDQTADLETKISTEV |