**Sequences of Hoxproteins in *L. boulardi*:**

**1) Labial**

**>evm.model.scaffold00168.5 EVMevm.TU.scaffold00168.5 scaffold00168:107527-121151(+)**

MMMMDMGMYGTYGKPTDSYPNYGFSNHNQNGHLSVSSSPELPHHYQQSDIGPYSSASSDAFLASDSGASSTPPQSFYSQTGAVLHEDGTAIISSENGLSYTILDYAPSSSYSAQHHPTDPHSGYHIQPPNYRDDHRHHGASTIHQGSVVSHINHEQIHHHHHHHHQSSHHHEQDYQIPIGSSNYLHQIPPPPTEESLHYGQTSLRQSEYASHPTGHYKEESPDPSYHNLQQSGXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXSHVPTYKWMQVKRNCPKPVAPKTNPNGSEYGGGAVPGSVTSVFPPTVNTGPMTCLTSGPLTGLSSSFNNTGRTNFTNKQLTELEKEFHFNKYLTRARRIEIASALQLNETQVKIWFQNRRMKQKKRMKEGLIPTDGSTSNSLSQLSGARSNSNSPTGSSNLEIGGLNMHNFTNENSRDSSPSTSKE

**2) Proboscipedia**

**>evm.model.scaffold00168.4 EVMevm.TU.scaffold00168.4 scaffold00168:63940-70500(+)**

MSVNYNPLEENGLPRRLRTAYTNTQLLELEKEFHFNKYLCRPRRIEIAASLDLTERQVKVWFQNRRMKHKRQTLTKEDGDEKDGTSSDGLEKPKGEKMLIMDDDEKKSCHNCDISGVGDVGSTLSGEIGELSSGRGSNSNNNNTLSATNNNTGFNTNSNGASSVGSTNSVSSSFEKMIVDDDSRSQDGSEVTSPSLVKKLTGEVRVKVEAGHKSPNPVKQIVGKKSPSTKDMCSVKSNGVLLALPDSTVSTPGQGLPSQASSTRSLTPSSTPGTPASVQIQQESPLSIQTPHTYMQRPRSSPSSTTSVPTSILHGSSNTGTMSPHSRSNQAHFQQNVYPSTDYRNGLPNRQTVQQTNTYCSRDYQQQRVPYSGEIHPMYVRQNQIQRTNHHQRTGTNRSIYNSMQYHQQQYGTGEYNGYNQTNSYHDSYHRNMQNSTYNQQGYTTGQTEPEGYTGYAYPTTGSYHTSETMNSHSINSHNGQHYYGDMQQQQHNSDYISHQTSSLHSTSGDYRRGNKLHANYYEQTNQMQIHQGGEASNIPNSYVSSPDQFPSTPGITTXXXXXXXXXXXXITPPCNTNQTETTAENYGNFGNFYNEQVHNNAPPPSADNSNSSSDFNFLSNLANDFAPEYYQLS

**3) Deformed**

**>evm.model.scaffold00375.7 EVMevm.TU.scaffold00375.7 scaffold00375:154978-163026(+)**

MNPAGGYHQQHQQPSHHLGPDPKFPPSEEYSQNNYIPSAGADFFSGGXXXXXXXXXXXXXXXXXXXXXAASTPYGASSAVQLNGGYAGYGGYYPHHPHHQVHAVHHPSLHPHHHAVGALAMPPEAQQPPLTCPPTMHNPQQQPPVSTVLGSTPLSPSIMTNHVRQSESIQLPSQHDGNVCSPAGSGSLHRDNSPDLPQQHMQGNQQHHTDEGSDQEDGDDDQIMDGSPGMMEDDDEEDDGNRVVYAWMKKIHVAGVANGSYQPGMEPKRQRTAYTRHQILELEKEFHFNRYLTRRRRIEIAHTLVLSERQIKIWFQNRRMKWKKDNKLPNTKNVRRKNTNGQSQPAKNKTTNPRGKAASGNNNSSRKNNNNSPSSGMENSLDGSIGLDMSDVHGVNSGLTHPHGPHSGFQGHPLAHLQAQLSHHHIGGMMDGSGGPMVHMNSGSISPLAPATSPPGLSTPVPPPIIKSDYGLTAL

**4) Sex combs reduced**

**>evm.model.scaffold00375.3 EVMevm.TU.scaffold00375.3 scaffold00375:49832-70424(+)**

MSSYQFVNSLASCYVNQQPQQQPRPTPNSPGEPLQASSPAGADYYNPNAATSSYPTPCYSPQHYPQHPYATPAGGIQHSAPTGMIDYTQLQPQRLNSVTSNQQHGLQNQHHHSQLHVDPTAPLLQAVSAAAVASSTSSCKYADSTSSTSVASPQDLTTSTSRNSPTPMNTPGTSKGPSGHTSTPGGSSRSSAAASASSPPSGSSRGLGEGSXXXXXXXXXXXXXXXXXXTSSTGNNSSNKANTSGGNPPQIYPWMKRVHIGQSTVNANGETKRQRTSYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEHKMASMNIVPYHMSPYGHPYQFAPHPGQFAHLAT

**5) Antennapedia**

**>evm.model.scaffold00572.2 EVMevm.TU.scaffold00572.2 scaffold00572:90677-101519(+)**

MSSYFANSYIPDLRNGGVDNPHQHQHHYGAAVQVPQQSQSVTQQPQQGADPCDPSLLRQAVPAHHYGAGGQQGMPYPRFPPYDRMDIRNAAYYQQQQEHGGSLDGMSGYRSTSPSSGMGHMGHTPTPNGHPSTPIVYASCKLQAAAVDHQGSVLDGPDSPPLVESQIHHQMHTQHPHMQTQQSQHQQSQQHAHMQQQQHLMYQQQQQQPGSQAPTAAMHPQQQSQTQQHQGVVTSPIGQQQQSTPQGAASGNLPSPLYPWMRSQFERKRGRQTYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKENKTKGEPGSGDGETDISPQTSPQG

**6) Ultrabithorax**

**>CUFF.1678.1 scaffold00039 346aa**

MNSYFEQSAGGFYGSHHHQAGAAGQHHDPATAAAYRSFPLGLGMSPYASSQHHHHTSSSLGIHPGSGTNTRPPQDSPYDASVATACKLYSSTPEATGHTTSSYSSSASKDCKQQEQAAAHQNGYAAVMAAAAVKDVWQSATSAANSQSNSVVRPSACTPEGTRVGSYGGLVGGDPASSPGNNGSSRSLSSSWNTCNLNSSASQPVATQLHQQPAANHTFYPWMAIAGKEDIAKPHWTWLQGANGLRRRGRQTYTRYQTLELEKEFHTNHYLTRRRRIEMAHALCLTERQIKIWFQNRRMKLKKEIQAIKELNEQEKQAQAQKAAAAAAAAVHQQQGGGGGGPDGGN

**7) Abdominal-A**

**>evm.model.scaffold00039.15 EVMevm.TU.scaffold00039.15 scaffold00039:440712-475501(-)**

MSSKFIIDSMLPKYHQQFHHQQLFSSANPSSVQACSSSPVSSLESSLSAVAAAAVNYAQHNSPSPTGSSPQHSGSSASTSPAARATSSMYPYVSAAAAHHHHQQQQAVAAAAFGATSGMVPGFGSSAASSAALAAAAAVDAATTGDKSCRYTASLTGNVAPSANDPMVNYTLGHHHQNGATPGGLVSSASASSAVSAASASMAAAAQFYHQAAAASAVVDPLASCQQPTPGQPGIPEIPRYPWMSITDWMSPFDRVVCGPNGCPRRRGRQTYTRFQTLELEKEFHFNHYLTRRRRIEIAHALCLTERQIKIWFQNRRMKLKKELRAVKEINEQARREREEQDMMKKQQAEKQAKMQQEQQNALQHQQHHVGGLDKTQTDLLKAVSKVQA

**8) Abdominal-B**

**>evm.model.scaffold00039.22 EVMevm.TU.scaffold00039.22 scaffold00039:735606-747024(-)**

FSRVFPSPTVAGIQATGTGNSAGLTWWAMMPGTPYEDSPPPVAPTSSLASIQQNSSVGSXXXXXXXXXXXXXXXXXXXXPVPTASASSTSPSASSVTSNSAAGPLHIPAKRLTATPVGSTYGEVTCVESTGTPVGAGVIRHSHSSSAGSQGGWSYSPHHPQDTHYSSSTGTESLNHHQAYGGANPPTYYNLAADPSSTSGSSRDNRKPNSVGFWSPAATSIAGSTSDYKSYNSGGVATTTSSTGGSSSGTAGTTDPAVSCHQSFSQSWCSYSPYTTARHHHPVDSVGHHHAHSQASVSYLTPSAADERGRMAAAMVADAFPHESYNPIRNYGSEPVPSSPYSAPVMWASSPSTLFPAGSLAGVSVGVSGMSVGCGGPSNTLEWTGQVTVRKKRKPYTKFQTLELEKEFLYNAYVSKQKRWELARNLNLTERQVKIWFQNRRMKNKKNSQRQTXXXXXXXXXXXXXXXXXGAATSHHHSSSAHTPSSHHVVTQAHHANGPVKHHQ

**Sequences of Sex determinationproteins in *L. boulardi*:**

1. **Transformer**

**>evm.model.scaffold00016.59**

MRRRSPSSSSRDRRSRRSRSEDRRSNXXXXXXXXXXXXXXXXXXXXXXXHEILKKKMILEYELKRAALLKKQRTNGSXXXXXXXXXXXRCKDRSKSFYKPTIMSEKFDTSGGSEPLFRGPSTFLKPTEAELKQIIVDIHRNISGPVDINSDLQRDINNPEDVIVKRRDDEGKIPIFSRFNLNQSETSDPKNEETRTIRDINIVKINNSNRRSSSKSRTSSPESHSSLRYVICEGITPIFDRVELRPLDKSRFSKEAEHREVKTINFEKSRKENHSLKRRSRSLDSFDERNKSPRDTFLSRRDRRERSVYNQRKRSQRRSKSSDSSDNDCRGRYQRNGKRERSNDRARSSSHYRDRSSYSSKRRSSREKSHSTERRREDLSRLTRIETVREHRGRSRERRESYRQYEREYSEGRSREMASYPHYVEQIPVPVYYGNFPRPVMMPMIPMRGPPPPLRNRPPFGARFPPRFINPRFPPNPRFNRQF\*

1. **Transformer2**

**>evm.model.scaffold00197.8**

MSDMERSGSRSASPRRARTAEGIRDSRSRSRSRKSRERKEAHRPIKEYSRSRSRTPSRGRKNYRTNKYGAXXXXXXXXXXXXXHRSRSRSRSPYRSARYSRSRSRSYSRSRYSRDEDRNMYRSHSRSPMSSRRRHVGNRDNPCPSTCLGVFGLSICTTEEQIYHIFSKYGPVKRVIVVIDAKTRRSRGFSFVYFESPEDAKVAKEQCTGMEIDGRRIRVDFSITQRAHTPTPGIYMGKPTHLNEREFSGSRRRENSYRGSYRRSPSPYYRKRSRYDRSRTPSYSPRRY\*

1. **Doublesex**

**>evm.model.scaffold00011.26**

MGQDENSSKSSSNKDSDTKRTKPNCARCRNHGLTIRLAGHKIFCRFRRCECENCIILKQRQRNMADNTALKRRITETTNHKIQPGELDYLDDDLLVTLPQTKRMKKKCDGNSSNSSISDHDSLGVPSSVGDERIPSTSKVSPLDQIPQPLPSTSNSGIDLLFTHSIEFLKHFCYSWDRLHLTLMYVILKDSKMNMEEAAKKIEDAVNGISCKITYFHHHIIY\*

1. **Doublesex-Mab related 11E**

**>evm.model.scaffold00232.21**

MSLPRGVGLGVDVGQLMXXXXXXXXXXVLPAAFFLRASAERYQRTPKCARCRNHGVVSALKGHKRYCRWRDCVCAKCTLIAERQRVMAAQVALRRQQAQEESEARELGLQLQYNNGSCTTAPVMPTTTGVGTPAGSPPPHPGHVASPVGLAIPSAAAAAAAAQIQTQLQHQQNDCGILQRMRIPQQDDYRPSVKTEKNDTIAHNNSIVNVPGSKRARISVDTLEEDDRDSDSGPDILGDRASTKMKXXXXXXXXXXXXXXXXXXXXXXNSRSYVTPNATHLVATNEPEVIVNQKCENSINESEDGSAEPGTPSPTHTPPLTPALTPQREDTPAPENLSLRKSGSPPQTQPSLQAMDLVNPRHNSPPSSLAQAAAAAAHFSPYAPLYGPAASSLYCSPALYQHQPHPHLHEPRXXXXXXXXXXXXIPQPCGLQVQQQQQQQRSPVDVLLRVFPGRRRSDVEALLHRCKGDVVSAMEVMVCEDSLQPKSAFSPLAGALASAAVASAASATATAAYATRSAYCGPSPPTRHRFLAAPYTGTGYLPTVIRPPNQANHPNGTNDAYRETSPDDASDKTSYSE\*

1. **Doublesex-Mab related 93B**

**>evm.model.scaffold00045.12**

MLRGKSKKLEENDDSNVKQRKPKCARCRNHGLISWLRGHKRECRYRDCFCVKCSLIAERQRVMAAQVALKRQQAAEDAIALCMAKVTTGQKINRLPPGKIFGMTVTDPDTNKNNKEGNPVTLDTSTNNPPEDANDCIEKEEHNIFELKNQEKNEETKSEHEGSGISLFPKIKEKLIKKTDCAVSQTSMETLVRLFPNTKLSVLQLVLQRCGQDLLKAIEYFSCTEKSSTIDSHCPGISAFHPPKIDQLPEVLNQDSKNSSKTFTLPPLHPTNHLGESYCLLNVISEPVAKNFENTNFCGNNFSFGKSGTSRIDRESSIALNLQYNHYFDSGLQYNHQLREHHQFTDFSQRPSILHLPPFIPNIPCVQPNCLLCYKFA\*

1. **Fruitless**

**>evm.model.scaffold00002.93**

MVVNVKGLWRCNGKKFAKGSGLEIDKMDQQYCLRWNNHPANLTDVLSSLLAREALCDVTLACVGETFKAHQTILSACSPYFENIFLQNTHPHPIIFLKDVNDTEMKALLHFMYKGEVNVSQHLLPMFLKTAEALQIRGLTDNSVNNKSEEKSPSPEPEIQSSVRHTDSPSLQAHPEKRKRKVSGSYDVSLTGPPSERFLSDSQASSQCSYKSSPTVIPKLNNAMGGDAEDGSRPISPASQPQAPIKQELDHHMPDFHENISLPGHPIGLLNEDGGPTTGTPNDSLPGMESSEHHNPPEMLDGLDDSTFFTSPSIESVPISDMDRVNVSDFFEKLPHTYTSKCKICGRIVSNVKNHYLTHNPGNFVCPMCGCRRTRLDNLKVHIKQKHPDLVIEYKNAQYNMLLS\*