

Drosophila\_melanogaster\_antp

RKRGRTQTYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN

**Micrura\_alaskensis\_lab**

Lineus\_sanguineus\_hox1  
Lingula\_anatina\_lab  
Euprymna\_scolopes\_lab  
Capitella\_teleta\_lab  
Tribolium\_castaneum\_lab  
Drosophila\_melanogaster\_lab  
Branchiostoma\_floridae\_hox1

NEYGFAQQ PNTGRTNFINKQLTELEKEFHFNKYLTRAARRIEIAALGLNETQVKIWFQNRRMKQKIRM EGLVQNNNTAT  
QRLCFAQQ PNTGRTNFINKQLTELEKEFHFNKYLTRAARRIEIAALGLNETQVKIWFQNRRMKQKIRM EGLVQNNNTTG  
YQDYSGNI PNMGRTNFSDKQLTELEKEFHFNKYLTRAARRIEIAALGLNETQVKIWFQNRRMKQKIRM ESQTLPTAAFG  
GGLGAGGG NSTGRTNFINKQLTELEKEFHFNKYLTRAARRIEIAALGLNETQVKIWFQNRRMKQKIRL EAQGTPGLGNT  
DFSVFAQQ PNMGRTNFINKQLTELEKEFHFNKYLTRAARRIEIASALGLNETQVKIWFQNRRMKQKIRL ENTSTTPVSDS  
SSMLSIN C LNTGRTNFINKQLTELEKEFHFNKYLTRAARRIEIASALGLNETQVKIWFQNRRMKQKIRM EGLIBPEPISA  
SCSLSSNT NNSGRTNFINKQLTELEKEFHFNRYLTRARRIEIANTLQLNETQVKIWFQNRRMKQKIRV EGLIBADILQ  
EYGFITSG PNNGRTNFTTKQLTELEKEFHYNKYLTRAARRVEIAAALNLNETQVKIWFQNRRMKQKIRL ENGFSTPGSGG

**Micrura\_alaskensis\_pb**

Bugula\_turrita\_pb  
Capitella\_teleta\_pb  
Tribolium\_castaneum\_pb  
Drosophila\_melanogaster\_pb  
Branchiostoma\_floridae\_hox2

PSTPASNN PR LRTAYTNSQLLELEKEFHFNKYLCRPRRIEIASLDLTERQVKVWFQNRRMKYKRQS GKDMNENSVSS  
GSSVASNH PR LRTAYTNTQLLELEKEFHFNKYLCRPRRIEIASLDLTERQVKVWFQNRRMKFKRQT GKGSGNSPDAEC  
SSQQENGL PR LRTAYTNTQLLELEKEFHFNKYLCRPRRIEIASLDLTERQVKVWFQNRRMKHKRQT LGKGDDGDDKD  
EFVPENGL SPTDQVNS PR LRTAYTNTQLLELEKEFHFNKYLCRPRRIEIASLDLTERQVKVWFQNRRMKHKRQT LSKTDDEDNKDS  
SR LRTVFTNTQLLELEKEFHYNKYVCKPRKEIASYLDINERQVKIWFQNRRMRQKRRD TKGRSEIGTDPG

**Micrura\_alaskensis\_hox3**

Lineus\_sanguineus\_hox3  
Lingula\_anatina\_hox3  
Bugula\_turrita\_hox3  
Euprymna\_scolopes\_hox3  
Capitella\_teleta\_hox3  
Tribolium\_castaneum\_zen  
Drosophila\_melanogaster\_zen  
Branchiostoma\_floridae\_hox3

SGKELTGP PKFSRTAYTSAQLVELEKEFHFNRYLCRPRRIEMALLNISERQIKIWFQNRRMKYKKDQ KQKNLMEKIHME  
SELTGP PKFSRTAYTSAQLVELEKEFHFNRYLCRPRRIEMALLNISERQIKIWFQNRRMKYKKDQ KQKNLMEKIQLE  
FTNGEQP TKFARTAYTSAQLVELEKEFHFNRYLCRPRRIEMALLNTERQIKIWFQNRRMKHAI RN RSKKSCSKNSSN  
QNIPICEQP AKFARTAYTSAQLVELEKEFHFNQYLCRPRRIEMALLNISERQIKIWFQNRRMRFKKEK KLKVNMDSGCG  
GQSQVGQP SKFARTAYTSAQLVELEKEFHFNRYLCRPRRIEMALLNTERQIKIWFQNRRMKYKKDQ KQKNLMEKQYAG  
PQRTKPTA GKFARTAYTSAQLVELEREFHHGKYLSPRRIQIAENLNISERQIKIWFQNRRMKHKKEQ MNKVSTPRSSPA  
NHDSQRVK LKFRTAFTSVQLVELENEFKSNMYLRTTRRIEIAQRSLCERQVKIWFQNRRMKFKKDI QGHREPKSNAKL  
SPGLGCAA GKFARTAYTSAQLVELEKEFHFNRYLCRPRRVEMAMLNTERQIKIWFQNRRMKYKKEQ KVKGGSGGSGG

**Micrura\_alaskensis\_dfd**

Lineus\_sanguineus\_hox4  
Bugula\_turrita\_dfd  
Bugula\_turrita\_dfdb  
Capitella\_teleta\_dfd  
Tribolium\_castaneum\_dfd  
Drosophila\_melanogaster\_dfd  
Branchiostoma\_floridae\_hox4

NGNFNGGE NKRTRTAYTRHQILELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEH LPNTKLRLPDA  
NGNFNGSE SKFSRTAYTRHQILELEKEFHFNRYLTRRRRIEIAHALDLISERQIKIWFQNRRMKWKKEH LPNTKLRLP  
DGLD PKFARTAYTRHQILELEKEFHFNRYLTRRRRIEIAHTLDISERQIKIWFQNRRMKWKKEH LPNTKSKIPB  
FD D NKFRTRTAYTRQVLELEKEFHYNRYLTQRRRIEIAHTLDISERQIKIWFQNRRMKWKDH LSSSKGRPLBI  
ANGGFVCD SKFRTRTAYTRHQILELEKEFHFNRYLTRRRRIEIAHTLCISERQIKIWFQNRRMKWKKEH LPNTKTRLTDS  
GTFAPGME PKEQRTAYTRHQILELEKEFHYNRYLTRRRRIEIAHTLVIISERQIKIWFQNRRMKWKDN LPNTKNVRKRT  
GSYQPQME PKEQRTAYTRHQILELEKEFHYNRYLTRRRRIEIAHTLVIISERQIKIWFQNRRMKWKDN LPNTKNVRKKT  
STS YNGQD TKEFSRTAYTRQVLELEKEFHFNRYLTRRRRIEIAHSLGTERQIKIWFQNRRMKWKDN LPNTKTRSSSA

**Micrura\_alaskensis\_scr**

Lingula\_anatina\_scr  
Euprymna\_scolopes\_scr  
Capitella\_teleta\_scr  
Tribolium\_castaneum\_scr  
Drosophila\_melanogaster\_scr  
Branchiostoma\_floridae\_hox5

HENVNGME SKFRTTSYTRYQTLELEKEFHFNRYLTRRRRIEIAHALNLTERQIKIWFQNRRMKWKKEQ KLAHITKSTAMK  
GMNGIE SKFRTTSYTRHQTLLELEKEFHFNRYLTRRRRIEIAHALNLTERQIKIWFQNRRMKWKKEQ KLAHLTKTEAMK  
YSQDPDQE SKFSRTTSYTRHQTLLELEKEFHYNKYLTRRRRIEIAHALNLTERQIKIWFQNRRMKWKKEH KLSHIAKNMVC  
GHDTSNAD NKFRRTTSYTRHQTLLELEKEFHFNRYLTRRRRIEIAHSNLTERQIKIWFQNRRMKWKKEH KLAHLAKSQAK  
STVNANGE TKEQRTSYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEH MASMNIVPYHM  
STVNANGE TKEQRTSYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEH MASMNIVPYHM  
ACTG NKFRRTAYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEH KLSLSQCQQTQ

**Micrura\_alaskensis\_lox5**

Lineus\_sanguineus\_hox6  
Lingula\_anatina\_lox5  
Bugula\_turrita\_lox5  
Euprymna\_scolopes\_lox5  
Capitella\_teleta\_lox5  
Tribolium\_castaneum\_ftz  
Drosophila\_melanogaster\_ftz

LNGEMPIE QKPT RQTYTRYQTLELEKEFHFNKYLTRRRRIEIAHALGLTERQIKIWFQNRRMKWKKEN NLQKLTGPNTKI  
RFRNANRE QKPT RQTYTRYQTLELEKEFHFNKYLTRRRRIEIAHALGLTERQIKIWFQNRRMKWKKEN NLQKLTGPNTKL  
IGYE QKPT RQTYTRYQTLELEKEFHYNRYLTRRRRIEIAAHHLGLTERQIKIWFQNRRMKWKKEN NIPKLTGPNQKI  
TCYE QKPT RQTYTRYQTLELEKEFHYNRYLTRRRRIEIAHTLGLTERQIKIWFQNRRMKWKKEN NIAKLTG  
EEIETAYE QKPT RQTYTRFQTLLELEKEFHFNRYLTRRRRIEIAHSLGISERQIKIWFQNRRMKWKKEN NVSKLTGPDKSK  
SGADFGYE QKPT RQTYTRYQTLELEKEFHYNRYLTRRRRIEIAHALQLTERQIKIWFQNRRMKYKKEN NISKLTGPNGEL  
HGDSSATG NKFRQTYTRYQTLELEKEFHFNKYLTRRRRIEIAESLRTERQIKIWFQNRRMKAKDT FTEQSVTSTFD  
TLASDCKD SKPT RQTYTRYQTLELEKEFHFNRYITRRRIDIANALSIERQIKIWFQNRRMKSKDR TLSSBEHCGAG

**Micrura\_alaskensis\_antp**

Lineus\_sanguineus\_hox7  
Lingula\_anatina\_antp  
Euprymna\_scolopes\_antp  
Capitella\_teleta\_antp  
Tribolium\_castaneum\_antp  
Branchiostoma\_floridae\_hox6  
Branchiostoma\_floridae\_hox7  
Drosophila\_antp

MKSQFGPD RKGRQTYTRYQTLELEKEFHFNKYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN PSEGGETCKBE  
IFVFIGPD RKGRQTYTRYQTLELEKEFHFNKYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN NKQPVGIVCKBE  
PD RKGRHTYSRHQTLLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN GIELSRSPPQ  
MRSQYGPH RKGRQTYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN FAEMPGETGKP  
NQLKAGEP RKGRQTYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN RQIEVLQHTDD  
PWMRSQFE RKGRQTYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN FTKEGGSEGGG  
SQTAMGE E KKGRQTYTRYQTLELEKEFHFNKYLTRRKRIEIAHLGLTERQIKIWFQNRRMKWKKEN FIPSLNATTINQ  
PE RKGRQTYTRYQTLELEKEFHFNKYLTRRKRIEIAHLCLTERQIKIWFQNRRMKWKKEN KLESLKQPAES  
RKGRQTYTRYQTLELEKEFHFNRYLTRRRRIEIAHALCLTERQIKIWFQNRRMKWKKEN FTKEGPSSGEGE

**Micrura\_alaskensis\_lox4**

Lingula\_anatina\_lox4  
Euprymna\_scolopes\_lox4  
Capitella\_teleta\_lox4  
Lingula\_anatina\_lox2  
Capitella\_teleta\_lox2  
Tribolium\_castaneum\_abda  
Drosophila\_melanogaster\_abda  
Tribolium\_castaneum\_ubx  
Drosophila\_melanogaster\_ubx  
Branchiostoma\_floridae\_hox8

IVGPNSAQ RR RGRQTYSRYQTLELEKEQFNHYLTRRRRIEIAHSCLTERQIKIWFQNRRMKLKKEQ QOIKELNDESTKD  
PNSAQ RR RGRQTYSRFQTLLELEKEQFNHYLTRRKRIEVAHALCLTERQIKIWFQNRRMKLKKEQ QOIKEINDTLKK  
IVGPNSSQ RR RGRQTYSRFQTLLELEKEQFYNNYLTRRKRIEVAHALNLSERQVKIWFQNRRMKLKKEQ QOIREMNGACRS  
VVXPNSSQ RR RGRQTYSRYQTLELEKEQFNHYLTRRKRIEIAHALCLTERQIKIWFQNRRMKLKKEQ QOIKDLNGLDGK  
IVGPNSNQ RR RGRQTYTRYQTLELEKEFKFNRYLTRRRRIEELSMLCLTERQIKIWFQNRRMKEKEKI QAIKELNEKEKT  
VCGPNGCP RR RGRQTYTRFQTLLELEKEFHFNHYLTRRRRIEIAHALCLTERQIKIWFQNRRMKLKKEL RAVKEINEQARR  
FNGPNNGCP RR RGRQTYTRFQTLLELEKEFHFNHYLTRRRRIEIAHALCLTERQIKIWFQNRRMKLKKEL RAVKEINEQARR  
MTFGANGL RR RGRQTYTRYQTLELEKEFTNHYLTRRRRIEMAHALCLTERQIKIWFQNRRMKLKKEI QAIKELNEQEKO  
DWLGTNGL RR RGRQTYTRYQTLELEKEFTNHYLTRRRRIEMAHALCLTERQIKIWFQNRRMKLKKEI QAIKELNEQEKO  
PE RR RGRQTYSRYQTLELEKEFHFNKYLTRRKRIEIAHALGLTERQIKIWFQNRRMKLKKEA AMLCPKAETET

**Micrura\_alaskensis\_post2**

Lineus\_sanguineus\_hox9  
Lingula\_anatina\_post2  
Bugula\_turrita\_post2  
Euprymna\_scolopes\_post2  
Capitella\_teleta\_post2  
Lingula\_anatina\_post1  
Euprymna\_scolopes\_post1  
Capitella\_teleta\_post1  
Tribolium\_castaneum\_abdB  
Drosophila\_melanogaster\_abdB  
Branchiostoma\_floridae\_hox9  
Branchiostoma\_floridae\_hox10  
Branchiostoma\_floridae\_hox11  
Branchiostoma\_floridae\_hox12  
Branchiostoma\_floridae\_hox13  
Branchiostoma\_floridae\_hox14

NNSCTEPR TRKKRKYTRYQTMVLENEMFTNSYITRQKWEISCKLHLTERQVKVWFQNRRMKRKKLNR SRAVKSEVENT  
PFFSTEPR TRKKRKYTRYQTMVLENEMFLTNSYITRQKWEISCKLHLTERQVKVWFQNRRMKRKKLNR ARSKVKTRMTDA  
GSSS SRKKRKYTRYQTMVLENEMFLNNAYITRQKWEISCKLHLTERQVKVWFQNRRMKRKKLNR ERAKALFKSEDI  
SQGSHETK GRKKRKYTRYQTMVLENEMFLNNSYITRQKWEISCKLQLTERQVKVWFQNRRMKRKKLNR DRAKNAQLTVQQ  
SQNPDAPK QRKKRKYTRYQTMVLENEMFINNSYITRQKWEISCKLHLTERQVKVWFQNRRMKRKKLNR ERAKARLREDRE  
TTLPAVIH MRKKRKYPSKYQIAELERYVSNTYISKPKWELSQRQLSERQVKIWFQNRRMKRKKLNR ERAKSLIKDHEP  
ALPPSAIA LRKRRRPSKYQIAELERYALSTYISKPKWELSQRQLSERQVKIWFQNRRMKRKKLNR GGKQT  
SSSKSDVN PFKKRRKPSKQVSALENBYSTSTYITKARIKEVARELDLTERQIKIWFQNRRMKRKKLNR KRDETLKTQTPN  
LEWTGQVT VRKKRKYPSKFQTLLELEKEFLFNAVSKQKWEELARNLNTERQVKIWFQNRRMKRKKLNR TKRAKVQSDLFM  
HEWTGQVS VRKKRKYPSKFQTLLELEKEFLFNAVSKQKWEELARNLQTERQVKIWFQNRRMKRKKLNR QRQAAQQQNNNN  
PGWMNNHS SRKKRCPYTRFQTLLELEKEFLYNMLTRERYEISQHVNTERQVKIWFQNRRMKRKKLNR QRQANQQNNNN  
TSWMAPRV GRKKRCPYTKYQILELEKEFLFNMVSREPRQEI SRHVNLSDRQVKIWFQNRRMKRKKLNR QRKMA  
SNWMSAKS TRKKRCPYTKYQTLLELEKEFLFNMFTVTRERQEIARQLNLTDRQVKIWFQNRRMKRKKLNR RMK  
DWWWKLQS SRKKRCPYSKVQLELEKEFLYNMITYTREQRGEIARKVNLTDRQVKIWFQNRRMKRKKLNR RMK  
ADQSVARG GRKKRCPYTKYQLSVLEQYIQNRYVSRETRELSQLRNLTDRQVKIWFQNRRMKRKKLNR QRKLE  
GGSLTKP VRPKRPPSKYQLNELENBYVQNQYISRDKRLQLSQKLNLTTERQVKIWFQNRRMKRKKLNR QRKLD

**Micrura\_alaskensis\_cdx**

Capitella\_teleta\_cdx  
Tribolium\_castaneum\_cdx  
Branchiostoma\_floridae\_cdx  
Drosophila\_melanogaster\_cdx

PNWKTRT KDKYRVVYSDRQRLELEKEFHYSRYITINPKAEALKSLDLTERQIKIWQFNRRFAKERINK KKDQM SKG DVK  
PQPGKTRT KDKYRIVYSEYQKVELEKEYLYSKITIQRKAEELSRSIGLSERQVKIWFQNRRFAKERQKR KMEEA LSTS DS  
KDKYRVVYTDQRLLELEKEYTSRQYITIRKSELAQTLSLSERQVKIWFQNRRFAKERTSNK KREEV TQK DSP  
KDKYRVVYSDHQRLELEKEYSNKITYIKRQVLANELGLSERQVKIWFQNRRFAKERQKMA KGSDPNVMGVG