

D.mel-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKIE--SNVANYLGEAGAL
D.sec-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKIE--SNVASYLGEAGAL
D.sim-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKIE--SNVASYLGEAGAL
D.ere-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKIE--SNVANYLGEAGAL
D.san-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKID--SNVASYLGEAGAL
D.yak-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKID--SNVASYLGEAGAL
D.bia-32B 61 VLSPVQQRPOARMIPPIIKK-DKTVRITKAKTLREPLRVAKPKIE--TNVASYLGEAGAL
D.eug-32B 61 VLSPVQQRPOARMIPPIIKK-EKTVRITKAKTLREPLRVAKPKIE--SNVASYLGEAGAL
D.fic-32B 61 VLSPVQQRPOARMIPPIIKK-EKTVRITKAKTLREPLRVAKPKID--SSTANYLGEAGAL
D.tak-32B 61 VLSPVQQRPOARMIPPIIKK-EKTVRITKAKTLREPLRVAKPKIE--SNVASYLGEAGAL
D.ele-32B 61 VLSPVQQRTPTRMIPIIKK-EKTVRITKAKTLREPLRVAKPKID--SSVASYLGEAGAL
D.rho-32B 61 VLSPVQQRTPSRIPPIIKK-EKTVRITKAKTLREPLRVAKPKIE--SGVASYLGEAGAL
D.kik-32B 61 VLSPVQQRPRVPIPIIKK-EKTVRIKAKOLREPLRVAKPKID--VSG--SYVGETGAL
D.ana-32B 61 VLSPVQQRPRVPIPIIKK-EKTVRIKAKOLREPLRVAKPKIE--PASGSGFIVATESGAL
D.bip-32B 61 VLSPVQQRPRVPIPIIKK-EKTVRIKAKOLREPLRVAKPKIE--PNSGSGFIVATESGAL
D.per-32B 61 VLVNPFVQSRQGRILPIIKK-EKTVRIKAKOLREPLRVAKPKIEROST--SFVAETGAL
D.pse-32B 61 VLVNPFVQSRQGRILPIIKK-EKTVRIKAKOLREPLRVAKPKIEROST--SFVAETGAL
D.vir-32B 61 VLVNPFVQSRQGRILPIIKK-EKTVRIKAKOLREPLRVAKPKID----VHASIA--GAL
D.gri-32B 61 VLVNPFVQSRQGRILPIIKK-EKTVRIKAKOLREPLRVAKPKID----VHASIT--GAL
D.moj-32B 61 VLVNPFVQSRQGRILPIIKK-EKTVRIKAKOLREPLRVAKPKID----VHASIS--GAL
D.wil-32B 61 VLVNPFVQSRQGRILPIIKK-EKTVRIKAKOLREPLRVAKPKID----VHASIS--GAL
::*:*: * : *: **:* ** : : : * : : : * : *

D.mel-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.sec-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.sim-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.ere-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.san-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.yak-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.bia-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.eug-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.fic-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.tak-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.ele-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.rho-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.kik-32B 116 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.ana-32B 119 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.bip-32B 119 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.per-32B 117 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.pse-32B 117 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.vir-32B 115 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.gri-32B 115 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.moj-32B 115 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
D.wil-32B 118 POKWEEYEONDEISEDIKDIIYSEDPLCYSPIHVMEDEGLDQPEKQVTVLTHSTSPAGG
*****: * : : *****.*****: * : : :

AKQLKNNLETSIERLTAVSEQLSYII

D.mel-32B 177 SSRPIGVCS--GVQATVVASTSSSSSSAKQLKNNLETSIERLTAVSEQLSYIIQQNHE-E
D.sec-32B 177 SSRAIGVCS--GVQATVVASTSSSSSSAKQLKNNLETSIERLTAVSEQLSYIIQQNHE-E
D.sim-32B 177 SSRPIAVCS--GVQATVVASTSSSSSSAKQLKNNLETSIERLTAVSEQLSYIIQQNHE-E
D.ere-32B 177 SSRPSAVCS--GAQATVVASTSSSNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.san-32B 177 SSRPSAVCS--GVQATVVASTSSSNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.yak-32B 177 SSRPSAVCS--GVQATVVASTSSSNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.bia-32B 177 SSRPSAASG--VQATVVASTATMNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.eug-32B 177 SSRPSAAQ--GQATVVASTSGSN--AAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.fic-32B 177 GSSRPSAII--PVVQATVVLASTSNMNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.tak-32B 178 GS-RQSAGG--STVQATVVASTSNMNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.ele-32B 175 GSRANAAASQGIQATVVASTSNMNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.rho-32B 178 SSSRTSTAGPQVVQATVVASTSANN--SAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.kik-32B 173 GSRASATP----VVATVVASTSASSPAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.ana-32B 179 ASVSAPVVAT-----VVAAPNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.bip-32B 179 ASVSAPVVAT-----VVAAPNSAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.per-32B 170 -GHSRATISSAPVVATVVASNNANANAAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.pse-32B 170 -GHSRATISSAPVVATVVASNNANANAAKQLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.vir-32B 173 VVATVVSAP-----TSAAKTLKNNLETSIERLTAVSEQLSYIIQQNHE-E
D.gri-32B 175 VVATVVSCT-----TSAAKTLKNNLETSIERLTAVSEQLSYIIQQNHE-E
D.moj-32B 174 VVATVVSAP-----TSAAKTLKNNLETSIDRLTTVSEQLSYIIQQNHE-E
D.wil-32B 177 SASASVTPMV-----TTMVSTSSNSAKSLKNNLETSIDRLTTVSEQLSYIIQQNHE-E

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KDDDYFALSLVPAMRHLSLRKMYVRSKIQDILFKESED

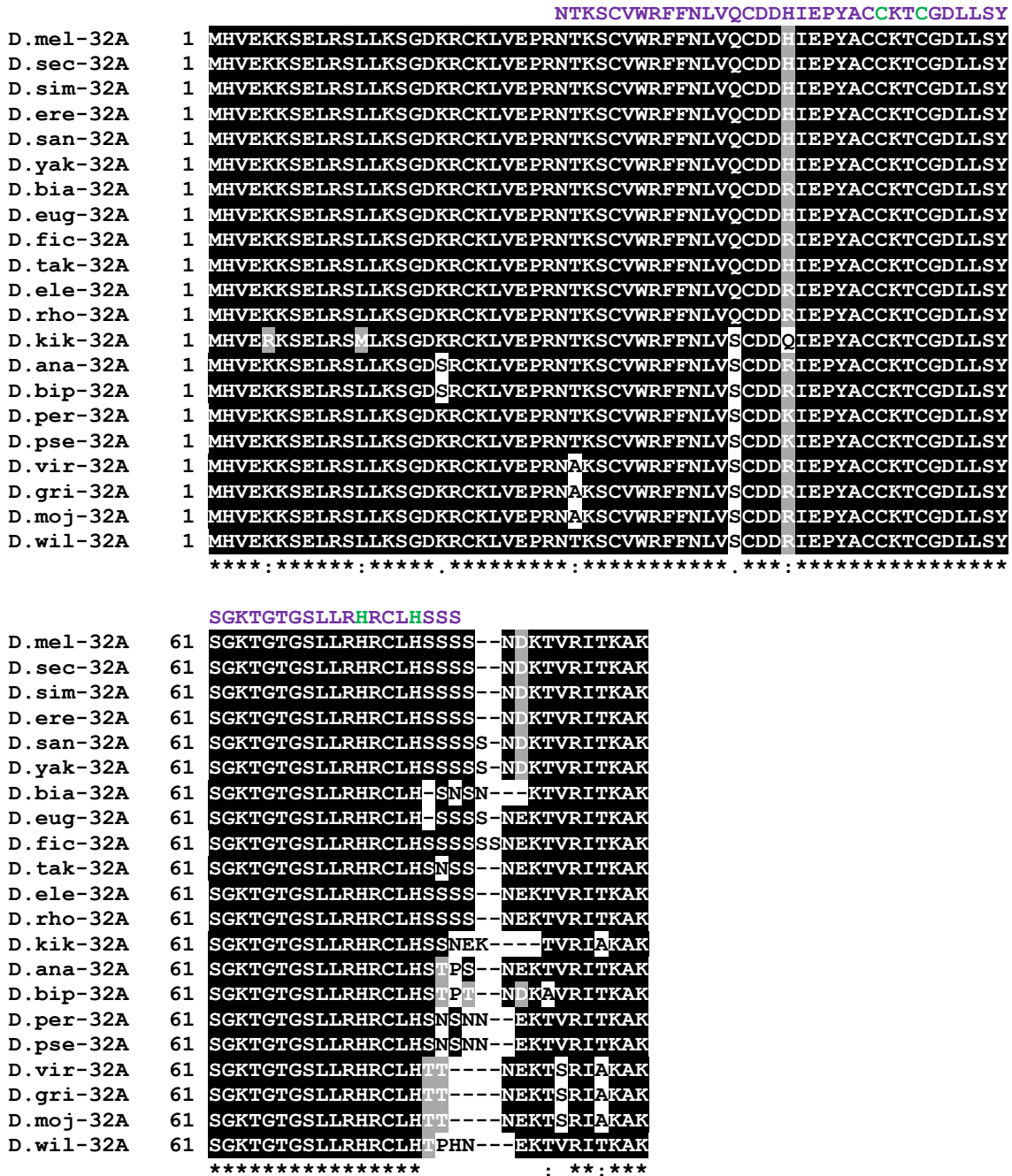
D.mel-32B 234 LTKDDDYFALSLVPAMRHLSLRKMYVRSKIQDILFKESESDTLAKDE--
D.sec-32B 234 LTKDDDYFALSLVPVMRHLSLRKMYVRSKIQDILFKESESDSPVAKDE--
D.sim-32B 234 LTKDDDYFALSLVPVMRHLSLRKMYVRSKIQDILFKESESDSPVAKDE--
D.ere-32B 234 LNKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSAPAKDE--
D.san-32B 234 HTKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSLPAKDE--
D.yak-32B 234 HTKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSLPAKDE--
D.bia-32B 234 ATKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSVPSKDE--
D.eug-32B 232 QTKDDDYFALSLVPVMRHLSLRKMYVRRAKIQEILFKESESDGAPTKDE--
D.fic-32B 234 HTKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSAPAKDE--
D.tak-32B 234 HTKDDDYFALSLVPVMRQLSLNRKMYVRSKIQEILFKESESDSAPAKDE--
D.ele-32B 234 QTKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSTPAKDE--
D.rho-32B 236 HTKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDSPVAKDE--
D.kik-32B 228 QTKDDDYFALSLVPVMRHLSLRKMYVRSKIQEILFKESESDGESLASKDE--
D.ana-32B 229 LSKDDDYFALSLVPVMRQLSLNRKMYVRSKIQEILFKESESDPIPSKED--
D.bip-32B 229 LVKDDDYFALSLVPVMRQLSLNRKMYVRSMITHEILYKEAQPTPPASKEE
D.per-32B 228 HSKDDDYFALSLVPSMRQLSLNRKMYVRRTKIQEVIKTSSEATSGKDE--
D.pse-32B 228 HIKDDDYFALSLVPSMRQLSLNRKMYVRRTKIQEVIKTSSEATSGKDE--
D.vir-32B 218 QTKDDDYFALSLVPVMRQLSLNRKMYVRSKIHEILYKESEETRTKTE---
D.gri-32B 219 QTKDDDYFALSLVPVMRQLSLNRKMYVRSKIHEILYKESEETTTKTE---
D.moj-32B 218 QIKDDDYFALSLVSSMRQLSLNRKMYVRRAKIQEVIKTSSEATSGKDE---
D.wil-32B 230 HSKDDDYFALSLVPVMRQLSLNRKMYVRSKIQEILFKESEANPSTKQE--

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C

BEAF-32A

(only the unique 32A sequences plus 10 shared amino acids [DKTVRITKAK] are shown)



Supplemental Figure S2. Boxshade of BEAF protein sequences from 21 *Drosophila* species. A) Abbreviations and species used. Species are listed in approximate order of evolutionary distance from *D. melanogaster*. B) Boxshade for BEAF-32B. Shown above the boxshade are the BED C₂H₂ zinc finger sequence (blue font with potential zinc-coordinating C and H in red); putative leucine zipper sequence (orange font) and BESS domain sequence (aqua font). C) Boxshade of the unique BEAF-32A sequence, plus 10 amino acids shared with BEAF-32B. Shown above the sequence is the BED C₂H₂ zinc finger sequence (purple font with potential zinc-coordinating C and H in aqua).