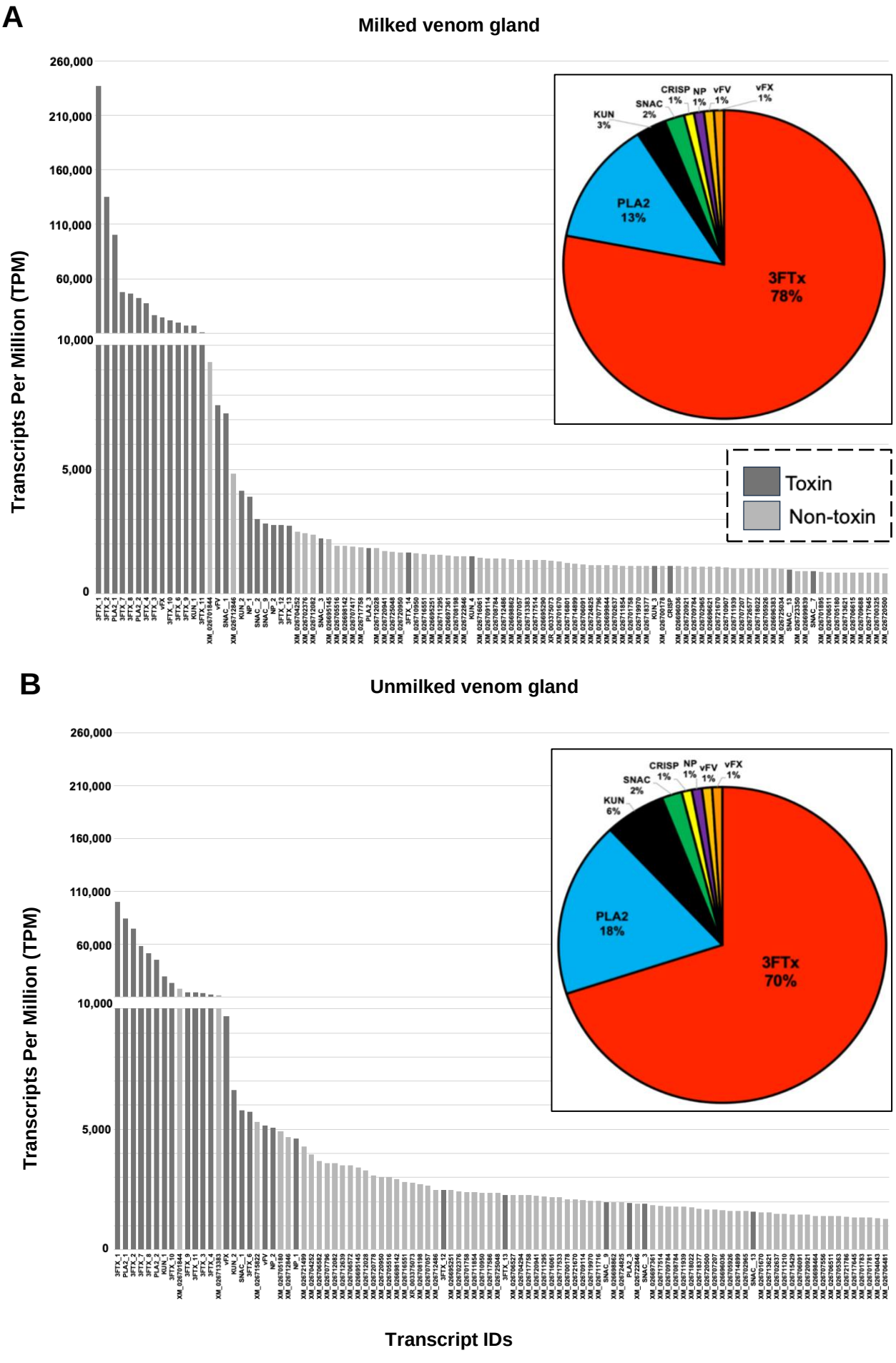
Supplemental Figure 1



Supplemental Figure 1. Toxin and non-toxin expression in a *Pseudonaja textilis* venom gland 96 hours post milking in comparison to an unmilked venom gland. Toxin transcripts (dark grey bars with transcript identities determine from *de novo* assembled venom gland transcriptomes) are expressed in high abundance (TPM; transcripts per million) in comparison to non-toxin transcripts (light grey bars with accession numbers from *P. textilis* genome annotations) in the top 100 expressed transcripts in (A) milked and (B) unmilked venom glands. Pie charts (insets in respective panels) show the percentages of total toxin reads belonging to each toxin superfamily, with toxin superfamilies that made up less than 1% excluded due to low abundance. Toxin identifications are as follows: 3FTx = three-finger toxin, CRISP = cysteine-rich secretory protein; KUN = Kunitz-type serine proteinase inhibitor; NP = natriuretic peptide; PLA2 = phospholipase A_2; SNAC = snake venom C-type lectin; vFA = venom factor V (pseutarin C non-catalytic subunit); vFX = venom factor X (pseutarin C catalytic subunit).

Supplemental Figure 2

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Pseudechis_australis      QAWYDEIKNFVYGIGAKPPGSVIGHYTQVVWYKSYLIGCASAKCSSSKYLYVCQYCPAGNIRGSIATPYKSGPPCADCPSACVNKLCTNP
Pseudechis                QAWYDEIKNFVYGIGAKPPGSVIGHYTQVVWYKSHLIGCASAKCSSSKYLYVCQYCPAGNIRGSIATPYKSGPPCADCPSACVNRLCTNP
CRISP_1*                  QAWYDEVKKFVYGIGAKPPSSVTGHYTQVVWYKSHLLGCASAKCSSTKYLYVCQYCPAGNIVGSIATPYKSGPPCGDCPSACDNGLCTNP
Pseudonaja_textilis*      QAWYDEVKKFVYGIGAKPPSSVTGHYTQVVWYKSHLLGCASAKCSSTKYLYVCQYCPAGNIVGSIATPYKSGPPCGDCPSACDNGLCTNP
Oxyuranus                 QAWYDEVKKFVYGIGAKPPSSVIGHYTQVVWYKSHLLGCASAKCSSTKYLYVCQYCPAGNIIGSIATPYKSGPPCGDCPSACDNGLCTNP
Drysdalia                 QAWYDEVKKFVYGIGAKPPGSVIGHYTQVVWYKSHLLGCASAKCSSTKYLYVCQYCPAGNIRGSIATPYKSGPTCGDCPSACVNGLCTNP
Notechis                  QAWYDEVKKFVYGIGAKPPGSVIGHYTQVVWYKSHLLGCASAKCSSTKYLYVCQYCPAGNIRGSIATPYKSGPTCGDCPSACVNGLCTNP
Austrelaps                QAWYDEVKKFVYGIGAKPPGSVIGHYTQVVWYKSHLLGCASAKCSSTKYLYVCQYCPAGNIRGSIATPYKSGPACGDCPSACVNGLCTNP

Pseudechis_australis      CKRNNDFSNCKSLAKKSKCQTEWIKKKCPASCFCHNKII
Pseudechis                CNYNNDFSNCKSLAKKSKCQTEWIKKKCPASCFCHNKII
CRISP_1*                  CKHNDDLSNCKTLVKKHKCQTEWIKSKCPATCFCRTEII
Pseudonaja_textilis*      CKHNDDLSNCKTLVKKHKCQTEWIKSKCPATCFCRTEII
Oxyuranus                 CKHNDDLSNCKPLAKKSKCQTEWIKSKCPATCFCRTEII
Drysdalia                 CKYEDAFTNCNELAKETKCKTEWIKSKCPATCFCHTEII
Notechis                  CKYEDDFSNCKALAKNSKCQTEWIKSKCPAACFCHNKII
Austrelaps                CKYEDAFTNCKALAKKTKCKTEWIKSKCPATCFCHNKII
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C Kunitz-type serine protease inhibitors

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KUN_3                     KDRPKFCELPADIGPCDDFTGAFHYSPREHECIEFIYGGCKGNANNFNTQEECESACAA-
Textilinin-6              KDRPKFCELPADIGPCDDFTGAFHYSPREHECIEFIYGGCKGNANNFNTQEECESTCAA-
Scutellin-3               KDRPKFCELPADIGPCEDFTGAFHYSPREHECIEFIYGGCKGNANNFNTLEECESACAA-
Microlepidin-3            KDRPKFCELPADIGPCEDFTGAFHYSPREHECIEFIYGGCEGNANNFNTLEECESACAA-
KUN_4                     KDRPKFCELLPDTGPCDDFTGAFHYSTRDRECIEFIYGGCGGNANKFNTLEECESTCARK
Textilinin-5              KDRPKFCELLPDTGSCEDFTGAFHYSTRDRECIEFIYGGCGGNANNFITKEECESTCAA-
Textilinin-7              KDRPKFCELLPDTGSCEDFTGAFHYSTRDRECIEFIYGGCGGNANNFKTLEECESTCAA-
Textilinin-2              KDRPELCELPPDTGPCRVRFPSFYYNPDEQKCLEFIYGGCEGNANNFITKEECESTCAA-
KUN_1*                    KDRPDFCELPADTGPCRVRFPSFYYNPDEKKCLEFIYGGCEGNANNFITKEECESTCAA-
Textilinin-1*             KDRPDFCELPADTGPCRVRFPSFYYNPDEKKCLEFIYGGCEGNANNFITKEECESTCAA-
Mulgin-3                  KDRPDFCELPADTGPCRVGFPSFYYNPDEKKCLEFIYGGCQGNANNFITKEECESTCAA-
Textilinin-3              KDRPNFCKLPAETGRCNAKIPRFYYNPRQHQCIEFLYGGCGGNANNFKTIKECESTCAA-
KUN_2                     KDRPEFCELPADTGSCKGNVPRFYYNADHHQCLKFIYGGCGGNANNFKTIEECKSTCAA-
Textilinin-4              KDHPKFCELPADTGSCKGNVPRFYYNADHHQCLKFIYGGCGGNANNFKTIEECKSTCAA-
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D Group I phospholipase A_2

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textilotoxin_C            ARIPPLPLNLIQFSNMIKCTIPGSQPLLDYANYGCYCGPGNNGTPVDDVDRCCQAHDECYDEASNHG-CY-----PELTLYDYYCDTGV
textilotoxin_A            SDIPPLPLNLVQFSYLIRCANKYKRPGWHYANYGCYCGSGGRGTPVDDVDRCCQAHDKCYEDAEKLG-CY-----PKWTTYYYYCGANG
textilotoxin_B            --------DLVEFGFMIRCANRNSQPAWQYMDYGCYCGKRGSGTPVDDVDRCCQTHNECYDEAAKIPGCK-----PKWTFYFYQCGSGS
textilotoxin_D            -SIPRPSLNIMLFGNMIQCTIPCEQSWLGYLDYGCYCGSGSSGIPVDDVDKCCKTHDECYYKAGQIPGCSVQPNEVFNVDYSYECNEG-
Austrelaps                SNIPLPSLDFEQFGKMIQCTIPCEESCLAYMDYGCYCGPGGSGTPSDELDRCCQTHDNCYAEAGKLPACKAMLSEPYNDTYSYSCIER-
Tropidechis               --IPARPLNLYQFGNMIQCANHGRRPTWHYMDYGCYCGKGGSGTPVDELDRCCQIHDDCYGEAEKLPACNYMMSGPYYNTYSYECNEG-
Notechis                  --------NLYQFGNMIQCANHGRRPTRHYMDYGCYCGKGGSGTPVDELDRCCQTHDDCYGEAEKLPACNYMMSGPYYNTYSYECNEG-
Oxyuranus                 ARIPPLPLSLLNFANLIECANHGTRSALAYADYGCYCGKGGRGTPLDDLDRCCHVHDDCYGEAEKLPACNYLMSSPYFNSYSYKCNEG-
PLA2_1*                   -RIPPLPLSLDDFSNLITCANRGSRSWLDYAHYGCFCGSGGSGTPVDDLDRCCQVHDNCFGDAEKLPACNYLFSGPYWNPYSYKCNEG-
Pseudonaja_1*             -RIPPLPLSLDDFSNLITCANRGSRSWLDYAHYGCFCGSGGSGTPVDDLDRCCQVHDNCFGDAEKLPACNYLFSGPYWNPYSYKCNEG-
PLA2_3                    -RIPPLPLSLVEFRILIKCANHNSRNVLDYADYGCYCGKGGSGTPVDELDRCCQAHDYCYDDAEKLPACNYLFSGPYWNPYSYKCNEG-
PLA2_2                    -RIPPLPLSLVEFRILIKCANHNSRNVLDYADYGCYCGKGGSGTPVDELDRCCQAHDYCYDDAEKLPACNYRFSGPYWNPYSYKCNEG-
Pseudonaja_2              -RIPPLPLSLVEFRILIKCANHNSRNVLDYADYGCYCGKGGSGTPVDELDRCCQAHDYCYDDAEKLPACNYRFSGPYWNPYSYKCNEG-

textilotoxin_C            -PYC-KARTQCQVFVCGCDLAVAKCLAGATYNDENKNINTGER--CQ
textilotoxin_A            -PYC-KTRTKCQRFVCNCDVVAADCFASYPYNRRYWFYSNKKR--CR
textilotoxin_B            QFTCRKSKDVCRNVVCDCDFKAALCLTGARYNSANYNIDIKTH--CR
textilotoxin_D            QLTCNESNNECEMAVCNCDRAAAICFARFPYNKNYWSINTEIH--CR
Austrelaps                QLTCNDDNDECKAFICNCDRAAVICFSGAPYNDSNYDIGTIEH--CK
Tropidechis               ELTCKDNNDECKAFICNCDRTAAICFARTPYNDANWNIDTKTR--C-
Notechis                  ELTCKDNNDECKAFICNCDRTAAICFARAPYNDANWNIDTKTR--CQ
Oxyuranus                 KVTCTDDNDECKAFICNCDRTAAICFAGATYNDENFMISKKRNDICQ
PLA2_1*                   EITCTDDNDECAAFICNCDRTAAICFAGATYNDENFMVTIKKKNICQ
Pseudonaja_1*             EITCTDDNDECAAFICNCDRTAAICFAGATYNDENFMVTIKKKNICQ
PLA2_3                    EITCTDDNDECAAFICNCDRTAAICFAGATYNDENFMVTIKKKNICQ
PLA2_2                    EVTCTDDNDECKAFICNCDRTAAICFAGAPYNDENFMITTKKKNICQ
Pseudonaja_2              EVTCTDDNDECKAFICNCDRTAAICFAGAPYNDENFMITIKKKNICQ
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E Coagulation factor V

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FV                        AQLREYHIAAQLEDWDYNPQPEELSRLSESDLTFKKIVYREYELDFKQEKPRDELSGLLGPTLRGEVGDILIIYFKNFATQPVSIHPQSAVY
vFV                       AQLREYHIAAQLEDWDYNPQPEELSRLSESDLTFKKIVYREYELDFKQEKPRDALSGLLGPTLRGEVGDSLIIYFKNFATQPVSIHPQSAVY
Pseutarin C               AQLREYHIAAQLEDWDYNPQPEELSRLSESDLTFKKIVYREYELDFKQEEPRDALSGLLGPTLRGEVGDSLIIYFKNFATQPVSIHPQSAVY
Omicarin C                AQLREYRIAAQLEDWDYNPQPEELSRLSESELTFKKIVYREYELDFKQEKPRDELSGLLGPTLRGEVGDILIIYFKNFATQPVSIHPQSAVY
Oscutarin C               AQLREYRLAAQLEDWDYNPQPEELSRLSESDLTFKKIVYREYELDFKQEKPRDELSGLLGPTLRGEVGDSLIIYFKNFATQPVSIHPQSAVY

FV                        NKWSEGSSYSDGTSDVERLDDAVPPGQSFKYVWNITAEIGPKKADPPCLTYAYYSHVNMVRDFNSGLIGALLICKEGSLNANGSQKFFNREY
vFV                       NKWSEGSSYSDGTSDVERLDDAVPPGQSFKYVWNITAEIGPKKADPPCLTYAYYSHVNMVRDFNSGLIGALLICKEGSLNANGSQKFFNREY
Pseutarin C               NKWSEGSSYSDGTSDVERLDDAVPPGQSFKYVWNITAEIGPKKADPPCLTYAYYSHVNMVRDFNSGLIGALLICKEGSLNANGSQKFFNREY
Omicarin C                NKWSEGSSYSDGTSDVERLDDAVPPGQSFKYVWNITAEIGPKKADPPCLTYAYYSHVNMVRDFNSGLIGALLICKEGSLNANGAQKFFNREY
Oscutarin C               NKWSEGSSYSDGTSDVERLDDAVPPGQSFKYVWNITAEIGPKKADPPCLTYAYYSHVNMVRDFNSGLIGALLICKEGSLNADGAQKFFNREY
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FV                  VLMFSVFDESKNWYRKPSLQYTINGFANGTLPDVQACAYDHISWHLIGMSSSPEIFSVHFNGQTLEQNHYKVSTINLVGGASVTANMSVSRT
vFV                 VLMFSVFDESKNWYRKPSLQYTINGFANGTLPDVQACAYDHISWHLIGMSSSPEIFSVHFNGQTLEQNHYKVSTINLVGGASVTADMSVSRT
Pseutarin C         VLMFSVFDESKNWYRKPSLQYTINGFANGTLPDVQACAYDHISWHLIGMSSSPEIFSVHFNGQTLEQNHYKVSTINLVGGASVTADMSVSRT
Omicarin C          VLMFSVFDESKNWYRKPSLQYTINGFANGTLPDVQACAYDHISWHLIGMSSSPEIFSVHFNGQTLEQNHYKVSTINLVGGASVTANMSVSRT
Oscutarin C         VLMFSVFDESKNWYRKPSLQYTINGFANGTLPDVQACAYDHISWHLIGMSSSPEIFSVHFNGQTLEQNHYKVSTINLVGGASVTANMSVSRT

FV                  GKWLISSLVAKHLQAGMYGYLNIKDCGNPDTLTRKLSFRELRRIMNWEYFIAAEEITWDYAPEIPSSVDRRYKAQYLDNFSNFIGKKYKKAV
vFV                 GKWLISSLVAKHLQAGMYGYLNIKDCGNPDTLTRKLSFRELMKIKNWEYFIAAEEITWDYAPEIPSSVDRRYKAQYLDNFSNFIGKKYKKAV
Pseutarin C         GKWLISSLVAKHLQAGMYGYLNIKDCGNPDTLTRKLSFRELMKIKNWEYFIAAEEITWDYAPEIPSSVDRRYKAQYLDNFSNFIGKKYKKAV
Omicarin C          GKWLISSLVAKHLQAGMYGYLNIKDCGHPNTLTRKLSFRELRRIMNWEYFIAAEEITWDYAPEIPSSVDRRYKAQYLDNFSNFIGKKYKKAV
Oscutarin C         GKWLISSLVAKHLQAGMYGYLNIKDCGNPDTLTRKLSFRERRRIMKWEYFIAAEEITWDYAPEIPSSVDRRYKAQYLDNFSNFIGKKYKKAV

FV                  FRQYKDSNFTKPTYAIWPKERGILGPVIRAKVRDTISIVFKNLASRPYSIYVHGVSVSKDAEGAIYPSDPKENITHGKAVEPGQVYTYKWTV
vFV                 FRQYEDGNFTKPTYAIWPKERGILGPVIKAKVRDTVTIVFKNLASRPYSIYVHGVSVSKDAEGAIYPSDPKENITHGKAVEPGQVYTYKWTV
Pseutarin C         FRQYEDGNFTKPTYAIWPKERGILGPVIKAKVRDTVTIVFKNLASRPYSIYVHGVSVSKDAEGAIYPSDPKENITHGKAVEPGQVYTYKWTV
Omicarin C          FRQYEDGNFTKPTYAIWPKERGILGPVIKAKVRDTVTIVFKNLASRPYSIYVHGVSVSKDAEGAIYPSDPKENITHGKAVEPGQVYTYKWTV
Oscutarin C         FRQYEDSNFTKPTYAIWPKERGILGPVIKAKVRDTVTIVFKNLASRPYSIYVHGVSVSKDAEGAVYPSDPKENITHGKAVEPGQVYTYKWTV

FV                  LDTDEPTVKDSECITKLYHSAVDMTRDIASGLIGPLLVCKHKALSVKGVQNKADVEQHAVFAVFDENKSWYLEDNIKKYCSNPSTVKKDDPK
vFV                 LDTDEPTVKDSECITKLYHSAVDMTRDIASGLIGPLLVCKHKALSVKGVQNKADVEQHAVFAVFDENKSWYLEDNIKKYCSNPSAVKKDDPK
Pseutarin C         LDTDEPTVKDSECITKLYHSAVDMTRDIASGLIGPLLVCKHKALSVKGVQNKADVEQHAVFAVFDENKSWYLEDNIKKYCSNPSAVKKDDPK
Omicarin C          LDTDEPTVKDSECITKLYHSAVDMTRDIASGLIGPLLVCKLKALSVKGVQNKADVEQHAVFAVFDENKSWYLEDNIKKYCSNPSSVKKDDPK
Oscutarin C         LDTDEPTVKDSECITKLYHSAVDMTRDIASGLIGPPLVCKRKALSIRGVQNKADVEQHAVFAVFDENKSWYLEDNIKKYCSNPSSVKKDDPK

FV                  FYKSNVMYTLNGYASDRTEVLGFHQSEVVEWHLTSVGTVDEIVPVHLSGHTFLSKGKHQDILNLFPMSGESATVTMDNLGTWLLSSWGSCEM
vFV                 FYKSNVMYTLNGYASDRTEVLRFHQSEVVQWHLTSVGTVDEIVPVHLSGHTFLSKGKHQDILNLFPMSGESATVTMDNLGTWLLSSWGSCEM
Pseutarin C         FYKSNVMYTLNGYASDRTEVLRFHQSEVVQWHLTSVGTVDEIVPVHLSGHTFLSKGKHQDILNLFPMSGESATVTMDNLGTWLLSSWGSCEM
Omicarin C          FYKSNVMYTLNGYASDRTEVLGFHQSEVVQWHLTSVGTVDEIVPVHLSGHTFLSKGKHQDILNLFPMSGESATVTMDNLGTWLLSSWGSCEM
Oscutarin C         FYKSNVMYTLNGYASDRTEVWGFHQSEVVEWHLTSVGTVDEIVPVHLSGHTFLSKGKHQDILNLFPMSGESATVTMDNLGTWLLSSWGSCEM

FV                  SNGMRLRFLDANYDDEDEGNEEEEEDDGDIFADIFIPPEVVKKKEKDPVNFVSDPESDKIAKELGLLDDEDNQE-ESHNVQTEDDEEQLMIA
vFV                 SNGMRLRFLDANYDDEDEGNEEEEEDDGDIFADIFIPSEVVKKKEEVPVNFVPDPESDALAKELGLIDDEGNPIIQPRREQTEDDEEQLMKA
Pseutarin C         SNGMRLRFLDANYDDEDEGNEEEEEDDGDIFADIFIPSEVVKKKEEVPVNFVPDPESDALAKELGLIDDEGNPIIQPRREQTEDDEEQLMKA
Omicarin C          SNGMRLRFLDANYDDEDEGNEEEEEDDGDIFADIFSPPEVVKKKEEVPVNFVPDPESDALAKELGLLDDEDNPE-QSRSEQTEDDEEQLMIA
Oscutarin C         SNGMRLRFLDANYDDEDEGNEEEEEDDGDIFADIFNPPEVVIKKEEVPVNFVPDPESDALAKELGLFDDEDNPK-QSRSEQTEDDEEQLMIA

FV                  TMLGFRSFKGSVAEEELNLTALALEEDAHASDPRIDSNSARNPDDIAGRYLRTINRGNKRRYYIAAEEVLWDYSPIGKSQVRSRAAKTTFKK
vFV                 SMLGLRSFKGSVAEEELKHTALALEEDAHASDPRIDSNSARNPDDIAGRYLRTINRGNKRRYYIAAEEVLWDYSPIGKSQVRSRAAKTTFKK
Pseutarin C         SMLGLRSFKGSVAEEELKHTALALEEDAHASDPRIDSNSARNPDDIAGRYLRTINRGNKRRYYIAAEEVLWDYSPIGKSQVRSRAAKTTFKK
Omicarin C          SVLGLRSFKGSVAEEELKHTALALEEDAHASDPRIDSNSARNSDDIAGRYLRTINRRNKRRYYIAAEEVLWDYSPIGKSQVRSLPAKTTFKK
Oscutarin C         SMLGLRSFKGSVAEEELKHTALALEEDAHASDPRIDSNSAHNSDDIAGRYLRTINRRNKRRYYIAAEEVLWDYSPIGKSQVRSLPAKTTFKK

FV                  AIFRSYLDDTFQTPSTGGEYEKHLGILGPIIRAEVDDVIEVQFRNLASRPYSLHAHGLLYEKSSEGRSYDDKSPELFKKDDAIMPNGTYTYV
vFV                 AIFRSYLDDTFQTPSTGGEYEKHLGILGPIIRAEVDDVIEIQFRNLASRPYSLHAHGLLYEKSSEGRSYDDKSPELFKKDDAIMPNGTYTYV
Pseutarin C         AIFRSYLDDTFQTPSTGGEYEKHLGILGPIIRAEVDDVIEIQFKNLASRPYSLHAHGLLYEKSSEGRSYDDKSPELFKKDDAIMPNGTYTYV
Omicarin C          AIFRSYLDDTFQTPSTGGEYEKHLGILGPIIRAEVDDVIEVQFRNLASRPYSLHAHGLLYEKSSEGRSYDDNSPELFKKDDAIMPNGTYTYV
Oscutarin C         AIFRSYLDDTFQTPSTGGEYEKHLGILGPIIRAEVDDVIEVQFRNLASRPYSLHAHGLLYEKSSEGRSYDDNSPELFKKDDAIMPNGTYTYV

FV                  WQVPPRSGPTDNTEKCKSWAYYSGVNPEKDIHSGLIGPILICQKGMIDKYNRTIDIREFVLFFMVFDEEKSWYFPKSDKSTRAEKLIGVQS-
vFV                 WQVPPRSGPTDNTEKCKSWAYYSGVNPEKDIHSGLIGPILICQKGMIDKYNRTIDIREFVLFFMVFDEEKSWYFPKSDKSTCEEKLIGVQS-
Pseutarin C         WQVPPRSGPTDNTEKCKSWAYYSGVNPEKDIHSGLIGPILICQKGMIDKYNRTIDIREFVLFFMVFDEEKSWYFPKSDKSTCEEKLIGVQS-
Omicarin C          WQVPPRSGPTDNTEKCKSWAYYSGVNPEKDIHSGLIGPILICQKGMIDKYNRTIDIREFVLFFMVFDEEKSWYFPKSDKSTCEEKLIGVQSS
Oscutarin C         WQVPPRSGPTDNTEKCKSWAYYSGVNPEKDIHSGLIGPILICQKGMIDKYNRTIDIREFVLFFMVFDEEKSWYFPKSDKSTCEEKLIGVQS-

FV                  RHTFPAINGIPYQLQGLTMYKDENVHWHLLNMGGPKDIHVVNFHGQTFTEEGREDNQLGVLPLLPGTFASIKMKPSKIGTWLLETEVGENQE
vFV                 LHTFPAINGIPYQLQGLTMYKDENVHWHLLNMGGPKDIHVVNFHGQTFTEEGREDNQLGVLPLLPGTFASIKMKPSKIGTWLLETEVGENQE
Pseutarin C         LHTFPAINGIPYQLQGLTMYKDENVHWHLLNMGGPKDIHVVNFHGQTFTEEGREDNQLGVLPLLPGTFASIKMKPSKIGTWLLETEVGENQE
Omicarin C          HHTFPAINGIPYQLQGLMMYKDENVHWHLLNMGGPKDIHVVNFHGQTFTEEGREDNQLGVLPLLPGTFASIKMKPSKIGTWLLETEVGENQE
Oscutarin C         RHTFPAINGIPYQLQGLMMYKDENVHWHLLNMGGPKDVHVVNFHGQTFTEEGREDNQLGVLPLLPGTFASIKMKPSKIGTWLLETEVGENQE

FV                  RGMQALFTVIDKDCKLPMGLASGIIQDSQISASGHVGYWEPKLARLNNTGKYNAWSIIKKEHEHPWIQIDLQRQVVITGIQTQGAMQLLKHL
vFV                 RGMQALFTVIDKDCKLPMGLASGIIQDSQISASGHVGYWEPKLARLNNTAIFNAWSIIKKEHEHPWIQIDLQRQVVITGIQTQGTVQLLQHS
Pseutarin C         RGMQALFTVIDKDCKLPMGLASGIIQDSQISASGHVGYWEPKLARLNNTGKYNAWSIIKKEHEHPWIQIDLQRQVVITGIQTQGTVQLLQHS
Omicarin C          RGMQALFTVIDKDCKLPMGLASGIIQDSQISASGHVEYWEPKLARLNNTGMFNAWSIIKKEHEHPWIQIDLQRQVVITGIQTQGTVQLLKHS
Oscutarin C         RGMQALFTVIDKDCKLPMGLASGIIQDSQISASGHVGYWEPKLARLNNTGMFNAWSIIKKEHEHPWIQIDLQRQVVITGIQTQGTVQLLKHS

FV                  YTVEYFFTYSKDGQNWITFKGRHSETQMHFEGNSDGTTVKENHIDPPIIARYIRLHPTKFHNRPTFRIELLGCEVEGCSVPLGMESGAIKNS
vFV                 YTVEYFVTYSEDGQNWITFKGRHSETQMHFEGNSDGTTVKENHIDPPIIARYIRLHPTKFYNRPTFRIELLGCEVEGCSVPLGMESGAIKNS
Pseutarin C         YTVEYFVTYSEDGQNWITFKGRHSETQMHFEGNSDGTTVKENHIDPPIIARYIRLHPTKFYNRPTFRIELLGCEVEGCSVPLGMESGAIKNS
Omicarin C          YTVEYFVTYSKDGQNWITFKGRHSETQMHFEGNSDGTTVKENHIDPPIIARYIRLHPTKFYNTPTFRIELLGCEVEGCSVPLGMESGAIKNS
Oscutarin C         YTVEYFVTYSKDGQNWITFKGRHSKTQMHFEGNSDGTTVKENHIDPPIIARYIRLHPTKFYNTPTFRIELLGCEVEGCSVPLGMESGAIKDS

FV                  EITASSYKKTWWSSWEPSLARLNLKGRTNAWQPKVNNKDQWLQIDLQHLTKITSIITQGATSMTTSMYVKTFSIHYTDDNSTWKPYLDVRTS
vFV                 EITASSYKKTWWSSWEPFLARLNLEGGTNAWQPEVNNKDQWLQIDLQHLTKITSIITQGATSMTTSMYVKTFSIHYTDDNSTWKPYLDVRTS
Pseutarin C         EITASSYKKTWWSSWEPSLARLNLEGGTNAWQPEVNNKDQWLQIDLQHLTKITSIITQGATSMTTSMYVKTFSIHYTDDNSTWKPYLDVRTS
Omicarin C          EITASSYKKTWWSSWEPFLARLNLEGGTNAWQPEVNNKDQWLQIDLQHLTKITSIITQGATSMTTAMYVKTFSIHYTDDNSTWKPYLDVRTS
Oscutarin C         EITASSYKKTWWSSWEPFLARLNLKGRTNAWQPKVNNKDQWLQIDLQHLTKITSIITQGATSMTTSMYVKTFSIHYTDDNSTWKPYLDVRTS

FV                  MEKVFTGNINSDGHVKHFFKPPILSRFIRIIPKTWNQYIALRIELFGCEVF
vFV                 MEKVFTGNINSDGHVKHFFKPPILSRFIRIIPKTWNQYIALRIELFGCEVF
Pseutarin C         MEKVFTGNINSDGHVKHFFKPPILSRFIRIIPKTWNQYIALRIELFGCEVF
Omicarin C          MEKVFTGNINSDGHVKHFFKPPILSRFIRIIPKTWNQYIALRIELFGCEVF
Oscutarin C         MEKVFTGNINSDGHVKHFFNPPILSRFIRIIPKTWNQYIALRIELFGCEVF
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F Coagulation factor X

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Omicarin C          NVFLKSKVANRFLQRTKRANSLFEEFRSGNIERECIEERCSKEEAREVFEDDEKTETFWNVYVDGDQCSSNPCHYRGTCKDGIGSYTCTCLF
Oscutarin C         NVFLKSKVANRFLQRTKRANSLYEEFRSGNIERECIEERCSKEEAREVFEDDEKTETFWNVYVDGDQCSSNPCHYRGTCKDGIGSYTCTCLS
FX isoform 2        NVFLKSKVANRFLQRTKRANSLVEEFKSGNIERECIEERCSKEEAREAFEDDEKTETFWNVYVDGDQCSSNPCHYRGICKDGIGSYTCTCLS
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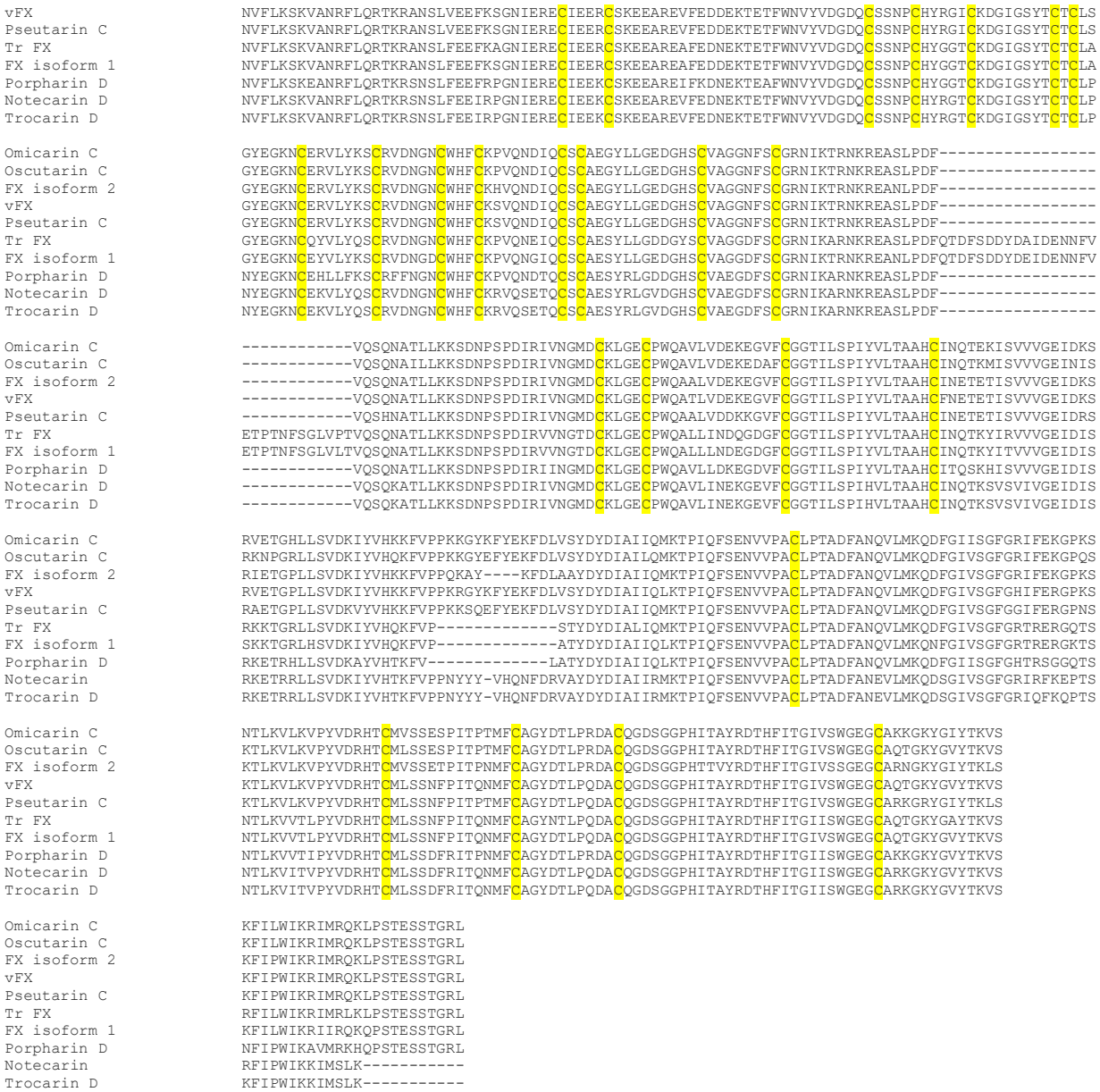
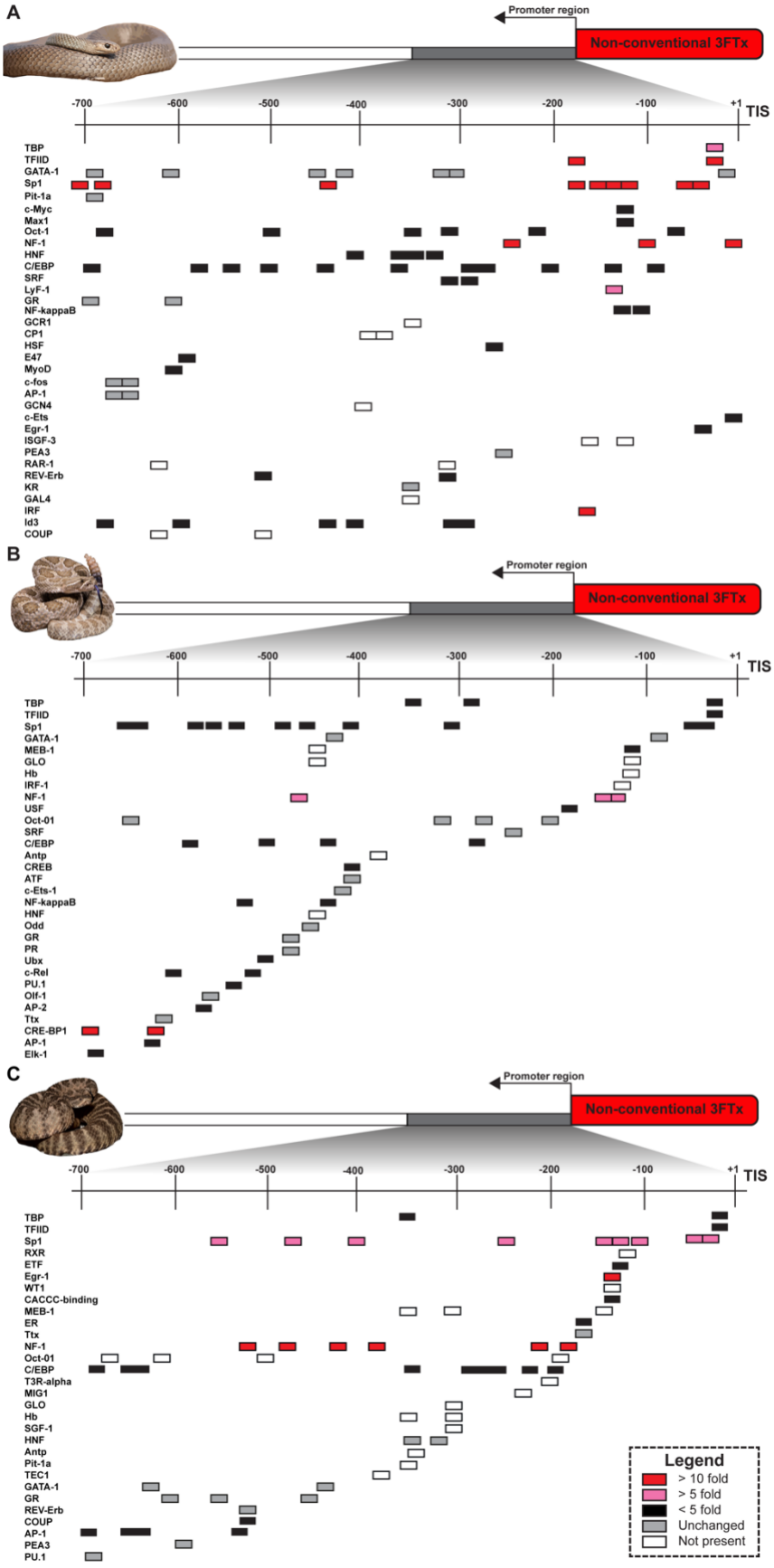


Supplemental Figure 2. Multiple sequence alignments of all major venom protein sequences translated from *Pseudonaja textilis* venom gland transcripts. A) Alignment of protein sequences from *P. textilis* three-finger toxin transcripts (3FTx_1 - 3FTx_14; this study), Pseudonaja_LC (A8HDK6; long neurotoxin 1), Pseudonajatoxin b (P13495), Pseudonajatoxin b homolog (Q9W7J5), short-chain neurotoxin 1/ 5 (P.textilis_SC1/5; Q9W7K2), short-chain neurotoxin 2 (P.textilis_SC2; Q9W7K1), short-chain neurotoxin 3 (P.textilis_SC3; Q9W7K0), short-chain neurotoxin 4 (P.textilis_SC4; Q9W7J9), short-chain neurotoxin 6 (P.textilis_SC6; Q9W7J7), short-chain neurotoxin 7 (P.textilis_SC7; Q9W7J6), and short-chain neurotoxin 8 (P.textilis_SC8; A8HDK1). Three-finger toxin sequences (long-chain) from Australian species *Austrelaps superbus* (A8S6A8), *Demansia vestigiata* (A6MFK4), *Drysdalia coronoides* (F8J2D7), *Notechis scutatus* (P01384), and *Oxyuranus microlepidotus* (A7X4Q3). Three-finger toxin sequences (short-chain) from Australian species *D. coronoides* (F8J2G3) and *O. microlepidotus* (A7X4S7).

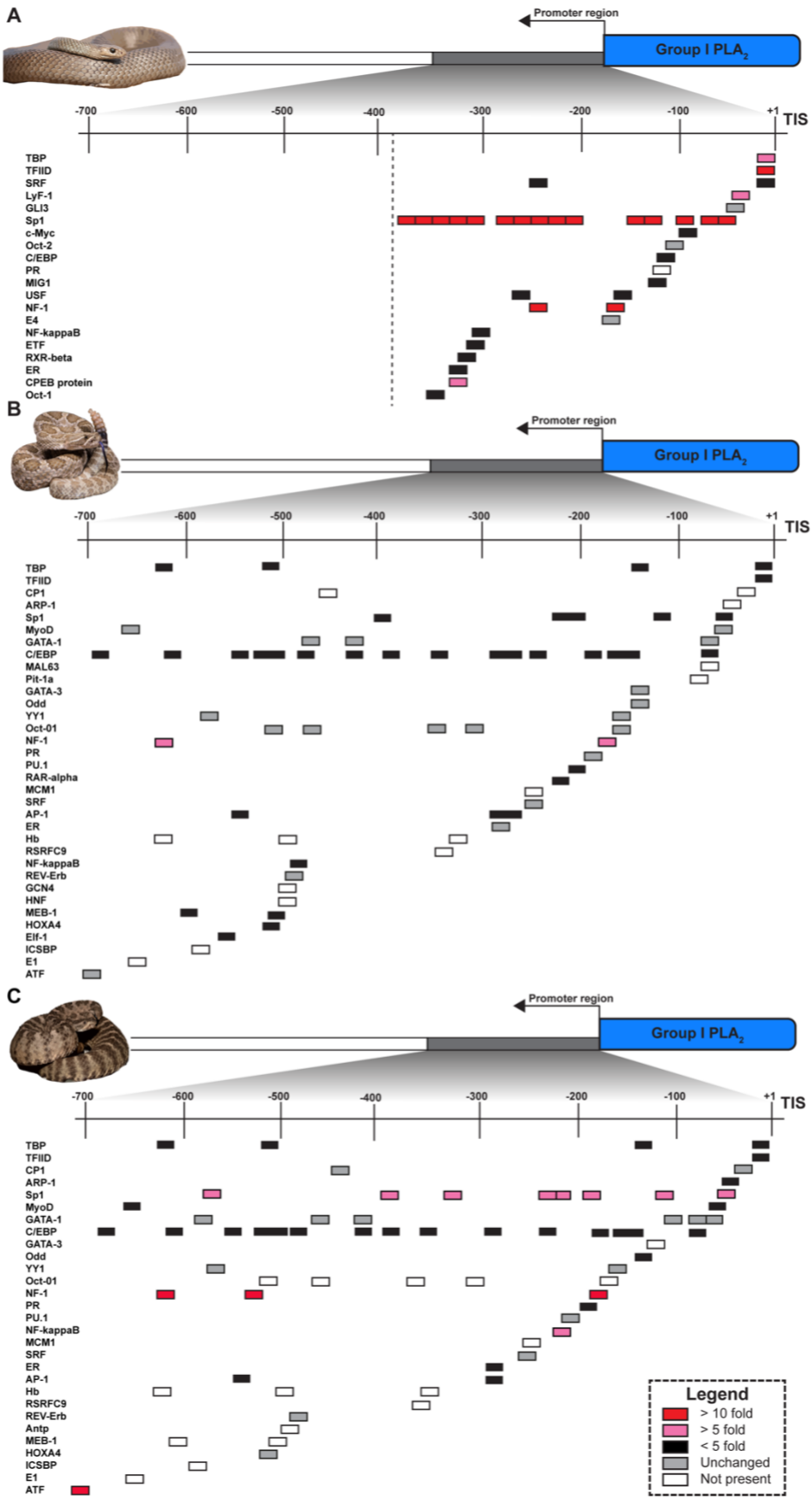
B) Alignment of protein sequences from cysteine-rich secretory proteins from *P. textilis* (CRISP_1; this study), *P. textilis* pseudechetoxin-like (Q3SB05), and Australian species *A. superbus* (A8S6B6), *D. coronoides* (F8J2D4), *N. scutatus* (Q3SB04), *O. microlepidotus* (Q3SB06), *P. australis* pseudechetoxin (Q8AVA4), and *P. porphyriacus* (Q8AVA3). C) Alignment of protein sequences from Kunitz-type serine protease inhibitors from *P. textilis* venom transcripts (KUN_1-4; this study), textilinin-1 (Q90WA1), textilinin-2 (Q90WA0), textilinin-3 (Q90W99), textilinin-4 (Q90W98), textilinin-5 (Q90W97), textilinin-6 (Q90W96), textilinin-7 (B5L5Q1), and Australian species *O. microlepidotus* (Microlepidin-3; B5KL27), *O. scutellatus* (Scutellin-3; B5KL29) and *Pseudechis australis* (Mulgin-3; Q6ITB9). D) Alignment of protein sequences from *P. textilis* phospholipase A_2 (PLA_2) transcripts (PLA2_1-3; this study), textilotoxin subunit A (P23026), textilotoxin subunit B (P23027), textilotoxin subunit C (P30811), textilotoxin subunit D (P23028), *P. textilis* acidic phospholipase A_2 1 (Pseudonaja_1; Q9W7J4), *P. textilis* acidic phospholipase A_2 2 (Pseudonaja_2; Q9W7J3), and PLA_2s from Australian species *A. superbus* (Q9PUG7), *N. scutatus* (Q9PSN5), *Oxyuranus scutellatus* (Q4VRI5), and *Tropidechis carinatus* (Q45Z25). E) Alignment of protein sequences from pseutarin C venom factor V (vFV; this study), characterized pseutarin C venom factor V (Q7SZN0), *P. textilis* coagulation factor V (Q593B6), and non-catalytic subunits of prothrombin activators in *O. microlepidotus* (omicarin C; Q58L90) and *O. scutellatus* (oscutarin C; Q58L91). F) Alignment of protein sequences from pseutarin C venom factor X (vFX; this study), characterized pseutarin C venom factor X (Q56VR3), *P. textilis* coagulation factor X isoform 1 (FX isoform 1; Q1L659), *P. textilis* coagulation factor X isoform 2 (FX isoform 2; Q1L658), *T. carinatus* coagulation factor X (Tr FX; Q4QXT9) and catalytic subunits of prothrombin activators in *N. scutatus* (Notecarin D1; P82807), *O. microlepidotus* (omicarin C; Q58L95), *O. scutellatus* (oscutarin C; Q58L96), *Pseudechis porphyriacus* (porpharin D; Q58L93), and *T. carinatus* (trocarin D; P81428).

Supplemental Figure 3



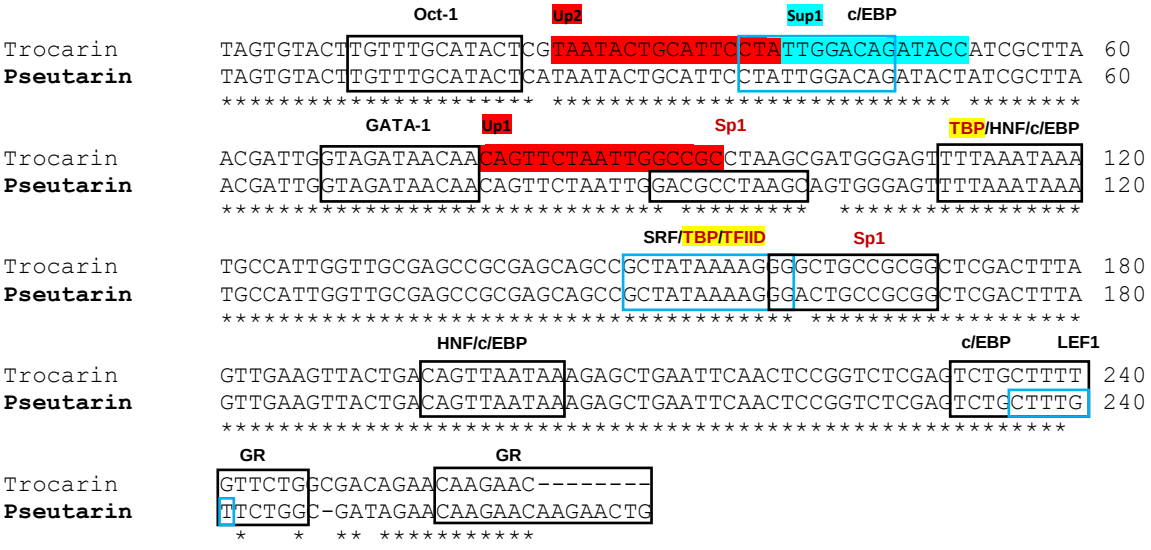
Supplemental Figure 3. Predicted *cis*-regulatory elements in the promoter regions of non-conventional three-finger toxin genes and homologs in an elapid and viperids. *Cis*-regulatory elements (CREs) were predicted 713 bp upstream from what would be the transcription initiation site (TIS) for the (A) *Pseudonaja textilis* non-conventional three-finger toxin (3FTx) (XP_026561523) present in the genome. Non-conventional 3FTxs or plesiotypic 3FTx-like homologs are present in viperid genomes, and 700 bp upstream from what would be the TIS of the closest *P. textilis* non-conventional 3FTx homologs in (B) *Crotalus viridis* and (C) *C. tigris* (XM_039332037.1; LOC120302985) were also evaluated for CREs. Fold-changes in expression levels of *trans*-factors known to interact with predicted CREs are shown between the *P. textilis* and viperid milked and unmilked venom glands (96 hours post venom milking). CRE predictions were completed with the online server AliBaba2.1 using the TRANSFAC 4.0 database. Photo credits: *P. textilis*, Ákos Lumnitzer; *C. viridis*, Wolfgang Wüster; *C. tigris*, Ben Lowe.

Supplemental Figure 4



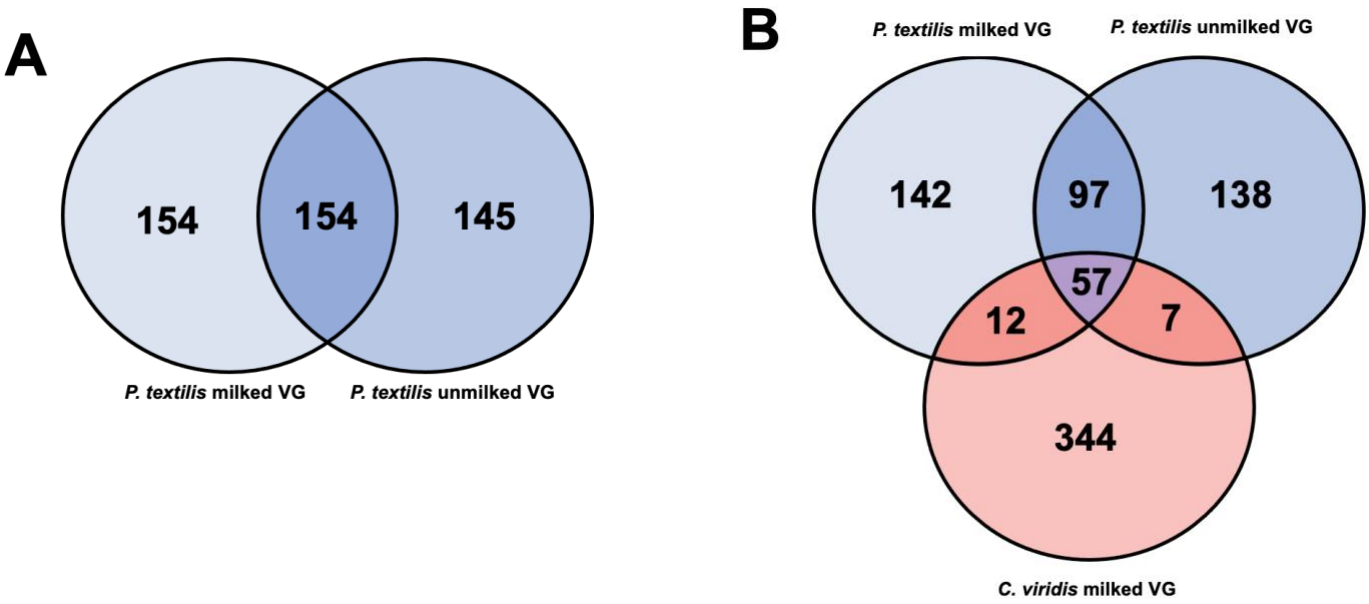
Supplemental Figure 4. Predicted *cis*-regulatory elements in the promoter regions of group I phospholipase A_2 genes and homologs in an elapid and viperids. From the *Pseudonaja textilis* genome, 385 bp upstream from the transcription initiation site (TIS) for (A) group IB phospholipase A_2 (PLA_2) in *P. textilis* (AY027495) was evaluated for *cis*-regulatory elements (CREs). Group I PLA_2 homologs are present in viperid genomes, and 700 bp upstream from what would be the TIS of the closest *P. textilis* group I PLA_2 (AY027495) homologs in (B) *Crotalus viridis* and (C) *C. tigris* (XM_039332037.1; LOC120302985) were also evaluated for CREs. Fold-changes in expression levels of *trans*-factors known to interact with predicted CREs are shown between the *P. textilis* and viperid milked and unmilked venom glands (96 hours post venom milking). CRE predictions were completed with the online server AliBaba2.1 using the TRANSFAC 4.0 database. Photo credits: *P. textilis*, Ákos Lumnitzer; *C. viridis*, Wolfgang Wüster; *C. tigris*, Ben Lowe.

Supplemental Figure 5



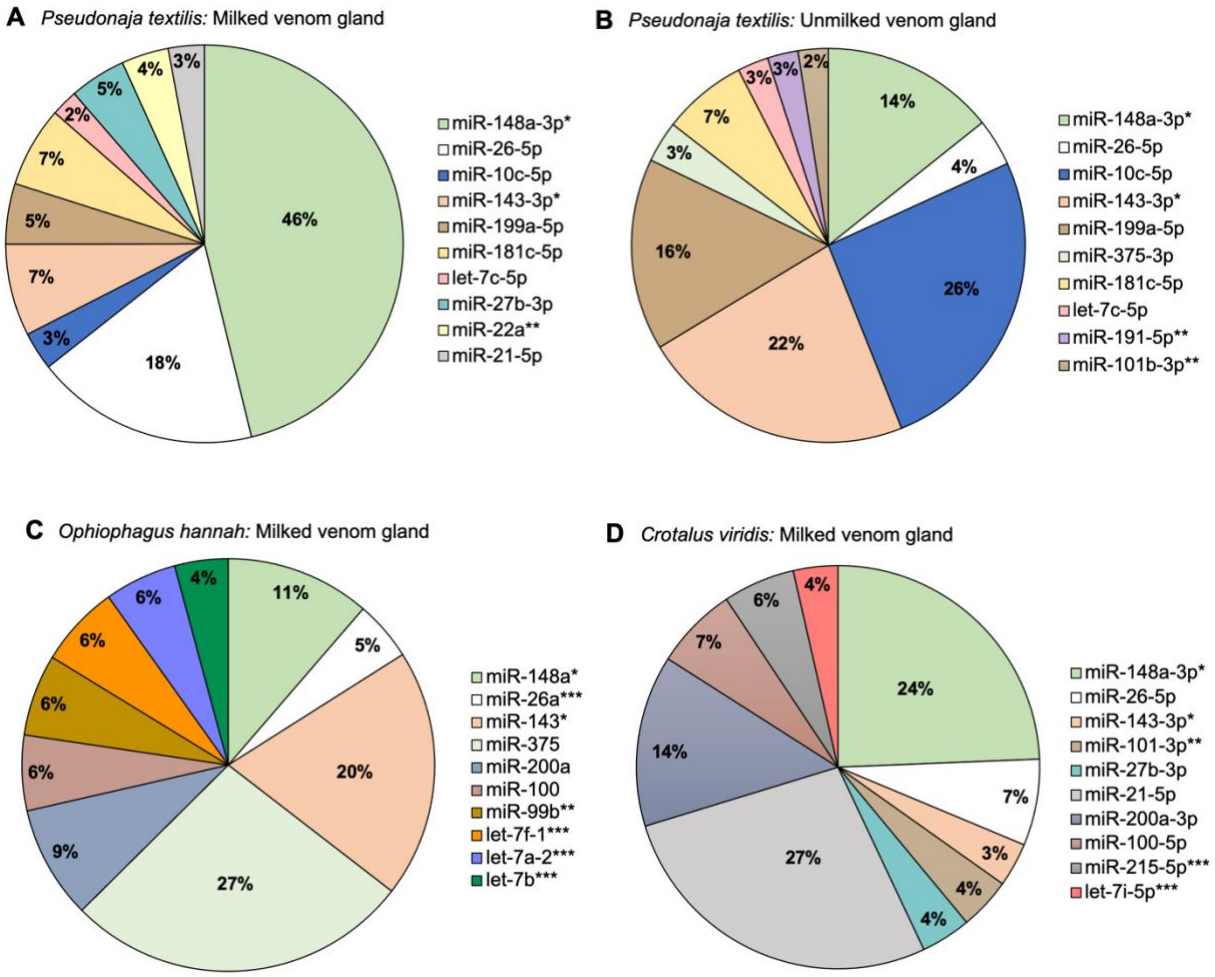
Supplemental Figure 5. Alignments of the two *VERSE* core promoter sequences from pseutarin C (*Pseudonaja textilis*) and trocarin D (*Tropidechis carinatus*) with predicted *cis*-regulatory elements. Three regulatory regions have been identified in this *VERSE* core promoter, two that upregulate venom factor X expression (Up1 and Up2, highlighted in red) and one that suppresses expression (Sup1, highlighted in teal) [40]. *Cis*-regulatory element (CRE) predictions were completed with the online server AliBaba2.1 using the TRANSFAC 4.0 database. *Trans*-regulatory factors that bind to CREs that were upregulated more than 10-fold in the venom gland of *P. textilis* after venom milking are colored in red.

Supplemental Figure 6



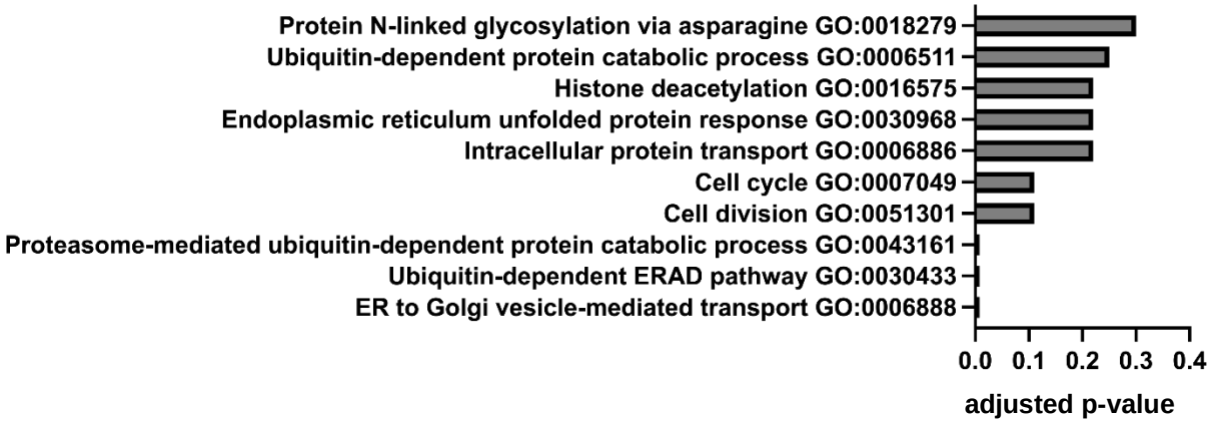
Supplemental Figure 6. Conservation of microRNAs between milked and unmilked *Pseudonaja textilis* venom glands and a milked *Crotalus viridis* venom gland. (A) There were approximately equal numbers of common and unique mature miRNA sequences in the milked and unmilked *P. textilis* venom glands. (B) Only 76 miRNAs were common to both *P. textilis* venom glands and the *Crotalus viridis* venom gland. VG = venom gland.

Supplemental Figure 7



Supplemental Figure 7. Abundances of the top ten expressed miRNAs in snake venom glands. Shown are the expression percentages for each of the top ten miRNAs in the (A) *Pseudonaja textilis* milked venom gland, (B) *P. textilis* unmilked venom gland, (C) *Ophiophagus hannah* milked venom gland, and (D) *Crotalus viridis* milked venom gland. * = miRNAs that are in the top ten most abundant miRNAs for all species, ** = miRNAs shared between species, but not in the top ten for all, and *** = miRNAs that are species-specific.

Supplemental Figure 8



Supplemental Figure 8. Biological processes associated with the transcripts targeted by *Pte-miR-1*. Analysis was completed using DAVID Bioinformatics Resources [73, 74] and Benjamini-Hochberg adjusted p-values used for identifying levels of significance for each biological process.