

Pi_19589 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pi_12090 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPSILGQL--LRD
Pi_23274 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pi_12094 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pi_16585 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPSILGQL--LRD
Pi_16618 1 DLWLSRFQHSEVAKLTLLPTRVLDNEFIGQPLPVKIGLPQSVFQAWSSPSILGQL--LRD
Pi_19318 1 DLWLSRFQHCEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pi_12646 1 DLWLSRFQHCEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pi_16636 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
CRN8 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pi_19565 1 DLWLSRFQHSEVAKLTLLPTRGDLNEFIGQPLPVKIGLPQSVFQAWSSPLILGQL--LRD
Pr_84114 1 DAWKAIKDEQVTELP--STCEDLREHLQRPLHVKVPVNDRLFLLIVSTKNTTGELSSILD
Pr_80840 1 DAWKAIKDEQVTELP--STCEDLREHLQRPLHVKVPVNDRLFLLIVSTKNTTGELSSILD
Pr_75879 1 DAWKAIKDEQVTELP--STCEDLKEHLQRPLHVKVPVNDRLFLLIMSTKNTTGELSSILD

Pi_19589 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
Pi_12090 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
Pi_23274 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
Pi_12094 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
Pi_16585 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYIN
Pi_16618 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYIN
Pi_19318 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYIN
Pi_12646 59 KLFELNDISPCFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
Pi_16636 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
CRN8 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYVN
Pi_19565 59 KLFELNDISPCEFLKDSVFSAAFPLYQVDG-DATESAFHYFWDSIIRVVLGVFVFRAYIN
Pr_84114 59 KVFEPDPRETLSDITAGILGSVIDPLGSGSEFATEDTYHHLWDSLIIAMLLRRVSN-GKFR
Pr_80840 59 KVFEPDPRETRSDITAGILGSVIDPLGSGSEFATEDTYHHLWDSLIIAMLLRRVSN-GKFR
Pr_75879 59 KVFEPDPKRKTLSDITAGILGSVIDPLGSGSEFATEDTYHHLWDSLIIAMLLRRVSN-GKFR

Pi_19589 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pi_12090 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pi_23274 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pi_12094 118 RDSSRKSLSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pi_16585 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKTLVWVSYGGVPYV
Pi_16618 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKTLVWVSYGGVPYV
Pi_19318 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSINVPREELSKKLWVSYGGVPYV
Pi_12646 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pi_16636 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
CRN8 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pi_19565 118 RDSSRKSSSSGLKRPDFLFALD--HICVFRGEEKEPRTSITVPREELSKKLWVSYGGVPYV
Pr_84114 118 RNINASTSITGLYRPDLCFYKNSNVCVVRGEEQ-ASGELQVPVRELHEKLTWRDYDAAPYV
Pr_80840 118 RNINASTSITGLYRPDLCFYKNSNVCVVRGEEK-ASGELQVPVRELYEKLITWRDYDAAPYV
Pr_75879 118 RNINASTSITGLYRPDLCFYKNSNVCVVRGEEK-ASGELQVPVRKLHEKLTWRDYDAAPYV

Pi_19589 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_12090 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_23274 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_12094 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_16585 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_16618 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_19318 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_12646 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_16636 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
CRN8 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pi_19565 176 FGYAASGFELELFAIYQDVTGN--VKTHLIGGFNLQHAPERFRLVLALLNLCLLFP AIVQ
Pr_84114 177 FGYAAVGLQVCLVAIRKDEMTERGAKVEI IETYDLGDLNGRLSFFLALLNLSTLFRPVVD
Pr_80840 177 FGYAAVGLQVCLVAIRKDEMTERGAKVEI IETYDLGDLNGRLSFFLALLNLSTLFRPVVD
Pr_75879 177 FGYAAVGLQVCLVAIRKDEMTERGAKVEI IETYDLGDLNGRLSFFLALLNLSTLFRPVVD

Pi_19589 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKRIYDSLKAYRIPCA
Pi_12090 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKRIYDSLKAYRIPCA
Pi_23274 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKRIYDSLKAYRIPCA
Pi_12094 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKRIYDSLKAYRIPCA
Pi_16585 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
Pi_16618 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
Pi_19318 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
Pi_12646 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
Pi_16636 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
CRN8 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
Pi_19565 234 NCPASAGTEFMDIHRANGVKVRLSPIFVDKIFHT---QEEYRRVKQIYDSLKAYGVPCA
Pr_84114 237 LIQPLDILEYGTIERDNGVQITFAEDCVVKTYPQNMPSSDIIRNLRELHRQMKKHSVPNV
Pr_80840 237 LIQPLDILEYGTIERDNGVQITFAEDCVVKTYPQNMPSSDIIRNLRELHRQMKKHSVPNV
Pr_75879 237 LIQPLDILEYGTIERDNGVQITFAEDCVVKTYPQNMPSSDIIRNLRELHRQMKKHSVPNV

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Pi_19589 290 DAVVTVDSDQLRLTLKPRGIVEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_12090 290 DAVVTVDSDQLRLTLKPRGIVEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_23274 290 DAVVTVDSDQLRLTLKPRGIVEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_12094 290 DAVVTVDSDQLRLTLKPRGIVEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_16585 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_16618 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_19318 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_12646 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_16636 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
CRN8 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
Pi_19565 290 DAVVTVDSDQLRLTLKPRGIEMKPCSLSELFVALGNVLEALVVLHRNGWMHRDIRWSNVI
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Pr_80840 297 VDKKTNMTKKYVKLAPVGRSLRPENAHQLLTALRDLIQALVALHAINLMHRDLRWENVL
Pr_75879 297 VDKKTNMTKKYVKLAPVGRSLRPENAHQLLTALRDLIQALVALHAINLMHRDLRWENVL

Pi_19589 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_12090 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_23274 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_12094 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_16585 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_16618 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_19318 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_12646 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_16636 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
CRN8 350 KHIDR-VEWFLIDFADAAQSPQKYPSGDHLTHDEHASDIFMEGGSSHTTAVDLWAVGYLVK
Pi_19565 350 KHIDR-VEWFLIDFADAAQSPQKYAQRSSLDARRTRFRYNYGRWIPHDG-----
Pr_84114 357 KYPGEGDKWFLIDFDEGASSP--AAKVKHLKAESHAPETSSSS--HTVKVDIWSVGFLLM
Pr_80840 357 KYPGEGDKWFLIDFDEGASSP--AAKVKHLKAESHAPETSSSS--HTVKVDIWSVGFLLM
Pr_75879 357 KYPGEGDKWFLIDFDEGASSP--AAKVKHLKAESHAPETSSSS--HTVKVDIWSVGFLLM

NLS

Pi_19589 409 TSKIEREWTAEPERALSWIG-----
Pi_12090 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQDHRARVCAARKK
Pi_23274 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
Pi_12094 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
Pi_16585 409 TSKIEREWTAEPERALS-----
Pi_16618 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
Pi_19318 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
Pi_12646 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
Pi_16636 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
CRN8 409 TSKIEREWTAEPERALFLDRLMNTDPSARPTADEALQLLSRFEREAAEQESQGKGVKKK
Pi_19565 409 TSKIEREWTAEPERALS-----
Pr_84114 413 TSPYQ---DLPPELESVKAQCLQKNPSSRPTAESLLKVVESLIES-----
Pr_80840 414 TSPCQ---DLPPELESVKAQCLQKSPSSRPTAESLLKVVESLIES-----
Pr_75879 413 TSPCH---DLPPELESVKAQCLQKNPSSRPTAESLLKVVESLIES-----

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Pi_19589 -----  
Pi_12090 469 DVREFLHRYGTTITRWDEVLWY  
Pi_23274 469 RRA-----  
Pi_12094 469 RRA-----  
Pi_16585 -----  
Pi_16618 469 RRA-----  
Pi_19318 469 RRV-----  
Pi_12646 469 RRA-----  
Pi_16636 469 RCA-----  
CRN8      469 RRA-----  
Pi_19565 -----  
Pr_84114 -----  
Pr_80840 -----  
Pr_75879 -----
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