```
TVCV OSU        MSIVSYEPKVSDFLNLSKKEEILPKALTRLKTVSISTKDIISVKESETLCDIDLLINVPLDKYRYVG   67  Q88921
     NZ-587     MSIVSYEPKVSDFLNLSKKEEILPKALTRLKTVSISTKDIISVKESETLCDIDLLINVPLDKYRYVG   67  I6NG32
     NZ-438     MSIVSYEPKVSDFLNLSKKEEILPKALTRLKTVSISTKDIISVKESETLCDIDLLINVPLDKYRYVG   67  I6NHH2
     Pet-MS     MSIVSYEPKVSDFLNLSKKEEILPKALTRLKTVSISTKDIISVKESETLCDIDLLINVPLDKYRYVG   67  B1A0S9
     D/A        MSIVSYEPKVSDFLNLSKKEEILPKALTRLKTVSISTKDIISVKESETLCDIDLLINVPLDKYRYVG   67  Q88605
YoMV (ORMV)     ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  Q66221
     Shanxi     ---MSYEPKVSDFLALTRKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  H6X0P4
     Br         ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  G9IAP7
     R/W        ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  Q7TD01
     Shanghai   ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  Q91PA6
     722        ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKDSESLCDIDLLVNVPLDKYRYVG   64  A0PA61
     Wh         ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  B2LS15
RMV  (Zhu/Yu)   ---MSYEPKVSDFLALTKKEEILPKALTRLKTVSISTKDVISVKESESLCDIDLLVNVPLDKYRYVG   64  Q9QDI8
     Kons.1105  MSMVSYEPKVNDFLFLTNKEKILPKALTRLKTVSISTKDIISVKESETLCDIDLLIDVPLDKYRYVG   67  F8SRF8
     Act.-AC/AD MSMVSYEPKVNDFLFLTNKEKILPKALTRLKTVSISTKDIISVKESETLCDIDLLNDVPLDKYRYVG   67  E0WXS9
     FSHS       MSMVSYEPKVNDFLFLTNKEKILPKALTRLKTVSISTKDVISVKESETLCDIDLLIDVPLDKYRYVG   67  I7A7B2
     NZ-439     MSMVSYEPKVNDFLFLTNKEKILPKALTRLKTVSISTKDIISVKESETLCDIDLLIDVPLDKYRYVG   67  F8SRF4
                   :******.*** *:.**:******************:****:**:******* :**********

TVCV OSU        ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTVDAKRK  134
     NZ-587     ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTADAKRK  134
     NZ-438     ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTADAKRK  134
     Pet-MS     ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLIPNYFVSTVDAKRK  134
     D/A        ILGAVFTGEWLVPDFVKGGVTISVIDKRLANSKECVIGTYRAAAKSKRFQFKLVPNYFVSTVDAKRK  134
YoMV (ORMV)     VLGVVFTGEWLVPDFVKGGVTVSVIDKRLENSKECIIGTYRAAAKDRRFQFKLVPNYFVSVADAKRK  131
     Shanxi     VLGVVFTGEWLVPDFVKGGVTVSVIDKRLENSKECIIGTYRAAAKDRRFQFKLVPNYFVSVADAKRK  131
     Br         VLGVVFTGEWLVPDFVKGGVTVSVIDKRLENSRECIIGTYRAAAKDRRFQFKLVPNYFVSVADAKRK  131
     R/W        VLGVVFTGEWLVPDFVKGGVTVSVIDKRLENSRECIIGTYRAAAKDRRFQFKLVPNYFVSTADAKRK  131
     Shanghai   VLGVAFTGEWLVPDFVKGGVTVSVIDKRLENSRESMIGTYRAAAKDRRFQFKLVPNYFVSTADAKRK  131
     722        VLGVVFTGEWLVPDFVKGGVTVSVIDKRLENSKECIIGTYRAAAKDKRFQFKLVPNYFVSVADAKRK  131
     Wh         VLGVVFTGEWLVPDFVKGGVTVSVIDKRLENSKECIIGTYRAAAKDRRFQFKLVPNYFVSVADAKRK  131
RMV  (Zhu/Yu)   VLGVAFTGEWLVPDFVKGGVTVSVIDKRLENSRESMIGTYRAAAKDRRFQFKLVPNYFVSTADAKRK  131
     Kons.1105  ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTADAKRK  134
     Act.-AC/AD ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTADAKRK  134
     FSHS       ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTADAKRK  134
     NZ-439     ILGAVFTGEWLVPDFVKGGVTISVIDKRLVNSKECVIGTYRAAAKSKRFQFKLVPNYFVSTADAKRK  134
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TVCV OSU        PWQVHVRIQDLKIEAGWQPLALEVVSVAMVTNNVVMKGLREKVVAINDPDVEGFEGVVDEFVDSVAA  201
     NZ-587     PWQVHVRIQDLKIEAGWQPLALEVVSVAMVTNNVVMKGLREKVVAINDPDVEGFEGVVDEFVDSVAA  201
     NZ-438     PWQVHVRIQDLKIEAGWQPLALEVVSVAMVTNNVVMKGLREKVVAINDPDVEGFEGVVDEFVDSVAA  201
     Pet-MS     PWQVHVRIQDLKIEAGWQPLALEVVSVAMVTNNVVMKGLREKVVAINDPDVEGFEGVVDEFVDSVAA  201
     D/A        PWQVHVRIQDLKIEAGWQPLALEVVSVAMVTNNVVMKGLREKVVAINDPDVEGFEGVVDEFVDSVAA  201
YoMV (ORMV)     PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     Shanxi     PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     Br         PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     R/W        PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     Shanghai   PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     722        PWQVHVRIQNLRIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     Wh         PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
RMV  (Zhu/Yu)   PWQVHVRIQNLKIEAGWQPLALEVVSVAMVTNNVVVKGLREKVIAVNDPNVEGFEGVVDDFVDSVAA  198
     Kons.1105  PWQVHVRIQDVKIEAGWQPLALEVVSVAMVANNVVMKGLREKIIAISDPDVEGFEGVVDDFVDSVEA  201
     Act.-AC/AD PWQVHVRIQDVKIEAGWQPLALEVVSVAMVANNVVMKGLREKIIAISDPDVEGFEGVVDEFVDSVEA  201
     FSHS       PWQVHVRIQDVKIEAGWQPLALEVVSVAMVANNVVMKGLREKIIAISDPDGEGFEGVVDEFVDSVEA  201
     NZ-439     PWQVHVRIQDVKIEAGWQPLALEVVSVAMVANNVVMKGLREKIIAISDPDVEGFEGVVDDFVDSVEA  201
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TVCV OSU        FKAVDNFRKRKKKVEERDVV-SKYKYRPEKYAGPDSFNLKEENVLQHYKPESVPVLRSGVGRAHTNA  267
     NZ-587     FKAVDNFRKRKKKVEEKGVV-SKYKYRPEKYAGPNSFNFKEENVLQHYEPESVPVFRSGVGRAHTNA  267
     NZ-438     FKAVDNFRKRKKKVEEKGVV-RKYKYRPEKYAGPNSFNLKEENVLQDYEPESVPVFRSGVGRAHTNA  267
     Pet-MS     FKAVDNFRKRKKKVEERDVV-SKYKYRPEKYAGPDSFNLKEENALQHYKPESVPVLRSGVGRAHTNA  267
     D/A        FKAVDNFKRRKKKVEEKGVV-SKYKYRPEKYAGPDSFNLKEENVLQHYKPESVPVFRSGVGRAHSDA  267
YoMV (ORMV)     FKAIDSFRKKKKRIGGRDVNSNKYRYRPERYAGPDSLQYKEENGLQHHELESVPVFRSDVGRAHSDA  265
     Shanxi     SKAIDSFRKKKKRIGGKDVNNNKYRYRPERYAGPNSLQYKEGNDLQHHEPESVPVFRSDVGRAHGDA  265
     Br         FKAIDSFRKKKKKIGGKDVNNNKYRYRPERYAGPDSLQYKEENVLQHHELESVPVFRSDVGRAHSDA  265
     R/W        FKAIDSFRKKKKKIGGRDVNNNKYRYRPERYAGPDSLQYKEENGLQHHELESVPVFRSDVGRAHSDA  265
     Shanghai   FKAIDSFRKKKKKIGGRDVN-NKYRYRPERYAGPDSLQYKEENGLQHHELESVPVFRSDVGRAHSDA  264
     722        FKAVDTFRKKKKKIGGKDVNNNKYRYRPERYAGQDSLNYKEENVLQHHELESVPVFRSDVGRAHSDA  265
     Wh         FKAIDSFRKKKKKIGGKDVSNNKYRYRPETYAGPDSLQYKEGNVLQHHELESVPVFRSNVGRAHSDA  265
RMV  (Zhu/Yu)   FKAIDSFRKKKKKIGGRDVNNNKYRYRPERYAGPDSLQYKEENGLQHHELESVPVFRSDVGRAHSDA  265
     Kons.1105  FRAVDNFRKKKRKIGEKEAV-SRNKYRPEKHAGPNSLYIKEENVLQHHELESVPVLRSGVGRTHTNA  267
     Act.-AC/AD FKAVDNFRKKKRKIGGSEVV-SKNKYRPEKHAGPNSLYIKEENVLQHHELESVPVFRSGVGRAHTNA  267
     FSHS       FKAVDNFRKKKRKIGEKEVV-SRNKYRPEKHAGPNSLYIKEENVLQHHELESVPVLRSGVGRTYTNA  267
     NZ-439     FKAVDNFRKKKRKIGEKEVV-SRNKYRPEKHAGPNSLYIKEENVLQHHELESVPVLRSGVGRTHTNA  267
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Figure S1. Conservation of MP^{TVCV} NLS among all subgroup 3 Tobamoviruses
Alignment of all sequenced MP proteins from the subgroup 3 Tobamoviruses (TVCV, YoMV and RMV). Conservation of monopartite NLS identified in TVCV in this study (TVCV OSU, top line) as predicted among all available subgroup 3 virus MP sequences is highlighted in yellow (basic residues) with additional residues predicted to be involved in importin-α interactions (http://nls-mapper.iab.keio.ac.jp/cgi-bin/NLS_Mapper_form.cgi//) shaded in grey. Accession numbers for each MP sequence is shown at the right of the first line of sequence, as are the residue positions within each protein (every line). Sequence similarity indicated below the aligned sequences. See text for details.

Figure S2. A putative basic monopartite NLS is not conserved among TMGMV isolates. Alignment of MP protein sequences from the four sequenced isolates of *Tobacco mild green mosaic virus* (TMGMV). The monopartite NLS predicted to be present in one isolate, and to correspond in sequence and position to the MP^{TVCV} NLS, is highlighted in yellow with additional residues predicted to be involved in importin-α interactions (http://nls-mapper.iab.keio.ac.jp/cgi-bin/NLS_Mapper_form.cgi//) shaded in grey. Accession numbers for each MP sequence are shown at the right of the first line of sequence, as are the residue positions within each protein (every line). Sequence similarity indicated below the aligned sequences. See text for details.