

**Molecular evidence of an isolate of mungbean yellow mosaic India virus with a recombinant DNA B component occurring on mungbean from mid-hills of Meghalaya, India**

**VirusDisease**

Amrita Banerjee<sup>a\*</sup>§, Yashi Umbrey<sup>b</sup>, Rohit M Yadav<sup>c</sup> and Somnath Roy<sup>c</sup>

<sup>a</sup>ICAR Research Complex for NEH Region, Umiam 793 103, Meghalaya, India

<sup>b</sup>College of Post Graduate Studies, Central Agricultural University, Umiam 793 103, Meghalaya, India

<sup>c</sup>ICAR-National Bureau of Plant Genetic Resources, Regional Station, Umiam 793 103, Meghalaya, India

§Corresponding author: [amrita.banerjee@icar.gov.in](mailto:amrita.banerjee@icar.gov.in) / [amrita.ars@gmail.com](mailto:amrita.ars@gmail.com)

**Supplementary Table 2** Reference DNA B sequences of MYMIV, MYMV, HgYMV and DoYMV used for comparison with Mg-mungbean-1

| Sl. No. | Isolate                  | Accession No. | Reference                                     |
|---------|--------------------------|---------------|---|
| 1.      | MYMIV:India:SoybeanTN    | AJ420331      | Girish and Usha (2005)                        |
| 2.      | MYMIV:India:Akola        | AY271894      | Tsai and Green (2004) unpublished             |
| 3.      | MYMIV:Pakistan           | AM992617      | Ilyas <i>et al.</i> (2010)                    |
| 4.      | MYMIV :Pakistan:cloneMI5 | FM202442      | Ilyas <i>et al.</i> (2010)                    |
| 5.      | MYMIV:Pakistan:cloneMI10 | FM955609      | Ilyas <i>et al.</i> (2010)                    |
| 6.      | MYMIV:Pakistan:cloneMI6  | FM202443      | Ilyas <i>et al.</i> (2010)                    |
| 7.      | MYMIV:Pakistan:cloneMI20 | FM202447      | Ilyas <i>et al.</i> (2010)                    |
| 8.      | MYMIV:Pakistan:cloneMI3  | FM202441      | Ilyas <i>et al.</i> (2010)                    |
| 9.      | MYMIV:India:Palampur     | FR714861      | Kumar <i>et al.</i> (2010) unpublished        |
| 10.     | MYMIV:Pakistan:cloneMI8  | FM202444      | Ilyas <i>et al.</i> (2010)                    |
| 11.     | MYMIV:Pakistan:cloneMI17 | FM161881      | Ilyas <i>et al.</i> (2010)                    |
| 12.     | MYMIV:Pakistan:cloneMI16 | FM202445      | Ilyas <i>et al.</i> (2010)                    |
| 13.     | MYMIV:Pakistan:cloneMI71 | FM955603      | Ilyas <i>et al.</i> (2010)                    |
| 14.     | MYMIV:Pakistan:cloneMI73 | FM955604      | Ilyas <i>et al.</i> (2010)                    |
| 15.     | MYMIV:Pakistan:cloneMI77 | FM955605      | Ilyas <i>et al.</i> (2010)                    |
| 16.     | MYMIV:India              | AF142440      | Pant <i>et al.</i> (2001)                     |
| 17.     | MYMIV:India:Mungbean     | AF416741      | Surendranath <i>et al.</i> (2003) unpublished |
| 18.     | MYMIV:India              | EU523046      | Yadav <i>et al.</i> (2009)                    |
| 19.     | MYMIV:India:DSR-YMV      | KP828155      | Ramesh <i>et al.</i> (2015) unpublished       |
| 20.     | MYMIV:India:Varanasi     | DQ061273      | Singh <i>et al.</i> (2006)                    |
| 21.     | MYMIV:Pakistan:cloneMI74 | FM955606      | Ilyas <i>et al.</i> (2010)                    |
| 22.     | MYMIV:Pakistan:cloneMI30 | FM958506      | Ilyas <i>et al.</i> (2010)                    |
| 23.     | MYMIV:Pakistan:cloneB4   | FM202439      | Ilyas <i>et al.</i> (2010)                    |
| 24.     | MYMIV:Pakistan:cloneB13  | FM202440      | Ilyas <i>et al.</i> (2010)                    |
| 25.     | MYMIV:Nepal:cloneS31     | JN543396      | Shahid <i>et al.</i> (2012) unpublished       |
| 26.     | MYMIV:Nepal:cloneRA46    | JQ327849      | Shahid and Natsuaki (2015) unpublished        |

|     |                              |          |   |
|-----|------------------------------|----------|---|
| 27. | MYMIV:India:Soybean          | AY049771 | Usharani and Malathi (2006)<br>unpublished      |
| 28. | MYMIV:India:Varanasi         | KC019305 | Bhatt <i>et al.</i> (2013) unpublished          |
| 29. | MYMIV:India                  | AY939925 | Rouhibakhsh and Malathi (2006)<br>unpublished   |
| 30. | MYMIV:India:cloneMBB-B31*    | AY937196 | John <i>et al.</i> (2008)                       |
| 31. | MYMIV:Indonesia:Bogor*       | JN368440 | Tsai <i>et al.</i> (2012) unpublished           |
| 32. | MYMIV:Indonesia:Purwakarta1* | JN368441 | Tsai <i>et al.</i> (2012) unpublished           |
| 33. | MYMIV:Indonesia:Purwakarta2* | JN368442 | Tsai <i>et al.</i> (2012) unpublished           |
| 34. | MYMIV:Indonesia:Brebes3*     | JN368446 | Tsai <i>et al.</i> (2012) unpublished           |
| 35. | MYMIV:Indonesia:Brebes4*     | JN368447 | Tsai <i>et al.</i> (2012) unpublished           |
| 36. | MYMIV:Indonesia:Brebes1*     | JN368443 | Tsai <i>et al.</i> (2012) unpublished           |
| 37. | MYMIV:Indonesia:Brebes2*     | JN368444 | Tsai <i>et al.</i> (2012) unpublished           |
| 38. | MYMIV:Indonesia:Rembang*     | JN368445 | Tsai <i>et al.</i> (2012) unpublished           |
| 39. | MYMV:India:LBG623            | KF928962 | Reddy <i>et al.</i> (2014) unpublished          |
| 40. | MYMV:India:LjKu02            | KP319017 | Lovejot <i>et al.</i> (2015) unpublished        |
| 41. | MYMV:India:LjKu01            | KP319016 | Lovejot <i>et al.</i> (2015) unpublished        |
| 42. | MYMV:India:LBG623-EcoRI      | KF947526 | Reddy <i>et al.</i> (2014) unpublished          |
| 43. | MYMV:India:Vigna*            | AJ132574 | Karthikeyan <i>et al.</i> (2004)                |
| 44. | MYMV:India:VignaKA34*        | AJ439057 | Karthikeyan <i>et al.</i> (2004)                |
| 45. | MYMV:India:sequence*         | DQ400849 | Rouhibakhsh <i>et al.</i> (2008)                |
| 46. | MYMV:India:cloneVB4*         | KC911725 | Satya <i>et al.</i> (2013) unpublished          |
| 47. | MYMV:India:clonePB1*         | KC911731 | Satya <i>et al.</i> (2013) unpublished          |
| 48. | MYMV:India:cloneCB1*         | KC911724 | Kanakala <i>et al.</i> (2013) unpublished       |
| 49. | MYMV:India: Namakkal*        | DQ865202 | Rajeswaran and Veluthambi (2006)<br>unpublished |
| 50. | MYMV:India: cloneCB2*        | KC911730 | Satya <i>et al.</i> (2013) unpublished          |
| 51. | MYMV:India:cloneVB3*         | KC911726 | Satya <i>et al.</i> (2013) unpublished          |
| 52. | MYMV:India:cloneVB2*         | KC911727 | Satya <i>et al.</i> (2013) unpublished          |
| 53. | MYMV:India:cloneVB1*         | KC911728 | Satya <i>et al.</i> (2013) unpublished          |
| 54. | MYMV:India:VignaKA28*        | AJ439058 | Karthikeyan <i>et al.</i> (2004)                |
| 55. | MYMV:India:VignaKA21*        | AJ439059 | Karthikeyan <i>et al.</i> (2004)                |
| 56. | MYMV:India:cloneCB3*         | KC911729 | Satya <i>et al.</i> (2013) unpublished          |
| 57. | HgYMV:Indi:lima bean         | AM932430 | Maruthi (2009) unpublished                      |
| 58. | DoYMV:India:DC               | KJ481206 | Akram <i>et al.</i> (2014) unpublished          |
| 59. | ToLCNDV: India:New Delhi     | U15017   | Padidam <i>et al.</i> (1995)                    |

\*Isolates used for recombination analysis