Claims

1. Use of a mistletoe lectin in the manufacture of a medicament for treating or preventing a viral infection in a subject, the treating or preventing comprising administering to said subject the mistletoe lectin in a therapeutically or prophylactically efficient amount, wherein said viral infection is an arbovirus infection, wherein said mistletoe lectin is isolated and purified from a Viscum species and comprises, consists essentially of or consists of:

(a) an amino acid sequence set forth in any one of SEQ ID NOs. 2 or 4; or

(b) a variant of the amino acid sequence of (a) that shares at least 99 % sequence identity with the amino acid sequence of (a) over its entire length and has antiviral activity of the amino acid sequence of (a), wherein the variant binds to an envelope protein and inhibits the arbovirus; or

(c) an amino acid sequence that is a functional fragment of the amino acid sequence of (a) or (b) having antiviral activity of the amino acid sequence of (a) or (b), wherein the functional fragment binds to an envelope protein and inhibits the arbovirus, wherein the functional fragment comprises:

(i) the N terminal A chain domain amino acids 1 to 254 of the sequence set forth in SEQ ID NO:2 or amino acids 34 to 287 of the sequence set forth in SEQ ID NO:4, and the C terminal B chain amino acids 270 to 532 of the sequence set forth in SEQ ID NO:2 or amino acids 302 to 564 of the sequence set forth in SEQ ID NO:4; or

(ii) a variant of the A and B chains having an amino acid having at least 99 % sequence identity with the amino acid sequence of the A and B chains as defined in (i), wherein the variant of the B chain binds to an envelope protein and inhibits the arbovirus.

2. The use according to claim 1, wherein the mistletoe lectin is encoded by

(a) a nucleic acid sequence set forth in SEQ ID NO: 1 or 3; or

(b) a variant of the nucleic acid sequence of (a) that encodes a mistletoe lectin that shares at least 99 % sequence identity with the product encoded by the nucleic acid sequence of (a) over its entire length and has antiviral activity of the product encoded by the nucleic acid sequence of (a), wherein the mistletoe lectin binds to an envelope protein and inhibits the arbovirus; or

(c) a fragment of the nucleic acid sequence of (a) or (b) that encodes a functional mistletoe lectin fragment having antiviral activity of the product encoded by the nucleic acid sequence of (a) or (b), wherein the functional mistletoe lectin fragment binds to an envelope protein and inhibits the arbovirus, wherein the functional fragment comprises:

(i) the N terminal A chain domain amino acids 1 to 254 of the sequence set forth in SEQ ID NO:2 or amino acids 34 to 287 of the sequence set forth in SEQ ID NO:4, and the C terminal B chain amino acids 270 to 532 of the sequence set forth in SEQ ID NO:2 or amino acids 302 to 564 of the sequence set forth in SEQ ID NO:4; or

(ii) a variant of the A and B chains having an amino acid having at least 99 % sequence identity with the amino acid sequence of the A and B chains as defined in (i) wherein the variant of the B chain binds to an envelope protein and inhibits the arbovirus.

3. The use according to claim 1 or 2, wherein the virus is a dengue virus.

4. The use according to any one of claims 1 to 3, wherein the subject is a mammal, preferably a human.

5. A mistletoe lectin isolated and purified from *Viscum ovalifolium* for use in treating or preventing an arbovirus infection in a subject, comprising, consisting essentially of or consisting of:

(a) the amino acid sequence set forth in any one of SEQ ID Nos. 2; or

(b) a variant amino acid sequence that shares at least 99 % sequence identity with the amino acid sequence of (a) over its entire length and has antiviral activity of the amino acid sequence of (a), wherein the variant binds to an envelope protein and inhibits the arbovirus; or

(c) an amino acid sequence that is a functional fragment of the amino acid sequence of (a) or (b) having antiviral activity of the amino acid sequence of (a) or (b), wherein the functional fragment binds to an envelope protein and inhibits the arbovirus, wherein the functional fragment comprises:

(i) the N terminal A chain domain amino acids 1 to 254 of the sequence set forth in SEQ ID NO:2, and the C terminal B chain amino acids 270 to 532 of the sequence set forth in SEQ ID NO:2; or

(ii) a variant of the A and B chains having an amino acid having at least 99 % sequence identity with the amino acid sequence of the A and B chains as defined in (i), wherein the variant of the B chain binds to an envelope protein and inhibits the arbovirus.

6. A pharmaceutical composition for use in treating or preventing an arbovirus infection in a subject, comprising a mistletoe lectin according to claim 5 and a carrier or diluent.

7. Use of a mistletoe lectin according to claim 5 in the manufacture of a medicament for treating or preventing a viral infection in a subject, the treating or preventing comprising administering to said subject the mistletoe lectin in a therapeutically or prophylactically efficient amount, wherein said viral infection is dengue virus infection.