WHAT IS CLAIMED IS:

1. Use of an effective amount of an isolated antibody or antigen-binding fragment thereof which specifically binds to semaphorin-4D (SEMA4D) in the manufacture of a medicament for treating a subject with increased blood brain barrier permeability associated with a neuroinflammatory disorder.

2. The use of claim 1, wherein the binding molecule inhibits SEMA4D interaction with Plexin-B1.

3. Use of an effective amount of an isolated antibody or antigen-binding fragment thereof which specifically inhibits semaphorin 4D (SEMA4D) interaction with a SEMA4D receptor in the manufacture of a medicament for treating a subject with increased blood brain barrier permeability associated with a neuroinflammatory disorder, wherein the medicament decreases blood brain barrier permeability.

4. The use of claim 3, wherein the SEMA4D receptor is Plexin-B1.

5. The use of claim 3 or claim 4, wherein the antibody or antigen-binding fragment thereof specifically binds to SEMA4D or Plexin-B1.

6. The use of any one of claims 1-5, wherein the antibody or antigen-binding fragment thereof competitively inhibits a reference monoclonal antibody selected from the group consisting of VX15/2503 or 67 from specifically binding to SEMA4D.

7. Use of an effective amount of an isolated antibody or antigen-binding fragment thereof which specifically binds to SEMA4D in the manufacture of a medicament for treating a subject with increased blood-brain barrier permeability associated with a neuroinflammatory disorder, wherein the antibody or antigen-binding fragment thereof competitively inhibits a reference monoclonal antibody selected from the group consisting of VX15/2503 or 67 from specifically binding to SEMA4D, thereby decreasing blood brain barrier permeability in the subject.

8. The use of any one of claims 1-7, wherein the antibody or antigen-binding fragment thereof specifically binds to the same SEMA4D epitope as a reference monoclonal antibody selected from the group consisting of VX15/2503 or 67.

9. The use of claim 8, wherein the antibody or antigen-binding fragment thereof comprises a variable heavy chain (VH) comprising VHCDRs 1-3 comprising SEQ ID NOs 6, 7,

and 8, respectively, and a variable light chain (VL) comprising VLCDRs 1-3 comprising SEQ ID NOs 14, 15, and 16, respectively.

10. The use of claim 9, wherein the antibody or antigen-binding fragment thereof is monoclonal antibody VX15/2503 or 67.

11. The use of claim 5, wherein the antibody or antigen-binding fragment thereof specifically binds to Plexin-B1.

12. The use of claim 11, wherein the antibody or antigen-binding fragment thereof competitively inhibits SEMA4D from binding to Plexin-B1.

13. Use of an effective amount of an isolated antibody or antigen-binding fragment thereof which specifically binds to semaphorin-4D (SEMA4D) and an isolated antibody or antigen-binding fragment thereof which specifically binds to Plexin-B1 in the manufacture of a medicament for treating a subject having increased blood brain barrier permeability associated with a neuroinflammatory disorder, wherein the SEMA4D and Plexin-B1 antibody or antigen-binding fragment thereof decrease permeability of the blood-brain barrier, thereby treating the subject.

14. The use of any one of claims 1-13, wherein the neuroinflammatory disorder is selected from the group consisting of Multiple Sclerosis, Amyotrophic Lateral Sclerosis, epilepsy, Alzheimer's Disease, Parkinson's Disease, meningitis, brain edema, and brain trauma.

WHAT IS CLAIMED IS:

1. Use of an effective amount of an isolated antibody or antigen-binding fragment thereof which specifically inhibits semaphorin 4D (SEMA4D) interaction with a SEMA4D receptor in the manufacture of a medicament for treating a subject with increased blood brain barrier permeability associated with a neuroinflammatory disorder, wherein the medicament decreases blood brain barrier permeability.

2. The use of claim 3, wherein the SEMA4D receptor is Plexin-B1.

3. The use of claim 1 or claim 2, wherein the antibody or antigen-binding fragment thereof specifically binds to SEMA4D.

4. The use of claims 3, wherein the antibody or antigen-binding fragment thereof competitively inhibits a reference monoclonal antibody selected from the group consisting of VX15/2503 or 67 from specifically binding to SEMA4D.

5. The use of claims 3, wherein the antibody or antigen-binding fragment thereof specifically binds to the same SEMA4D epitope as a reference monoclonal antibody selected from the group consisting of VX15/2503 or 67.

6. The use of claim 5, wherein the antibody or antigen-binding fragment thereof comprises a variable heavy chain (VH) comprising VHCDRs 1-3 comprising SEQ ID NOs 6, 7, and 8, respectively, and a variable light chain (VL) comprising VLCDRs 1-3 comprising SEQ ID NOs 14, 15, and 16, respectively.

7. The use of claim 6, wherein the antibody or antigen-binding fragment thereof is monoclonal antibody VX15/2503 or 67.

8. The use of claim 1 or claim 2, wherein the antibody or antigen-binding fragment thereof specifically binds to Plexin-B1.

9. Use of an effective amount of an isolated antibody or antigen-binding fragment thereof which specifically binds to semaphorin-4D (SEMA4D) and an isolated antibody or antigen-binding fragment thereof which specifically binds to Plexin-B1 in the manufacture of a medicament for treating a subject having increased blood brain barrier permeability associated with a neuroinflammatory disorder, wherein the SEMA4D antibody or antigen-binding fragment thereof and Plexin-B1 antibody or antigen-binding fragment thereof can decrease permeability of the blood-brain barrier, thereby treating the subject.

10. The use of any one of claims 1-9, wherein the subject's increased blood brain barrier permeability is associated with a neuroinflammatory disorder selected from the group consisting of Multiple Sclerosis, Amyotrophic Lateral Sclerosis, epilepsy, Alzheimer's Disease, Parkinson's Disease, meningitis, brain edema, and brain trauma.