Claims

1. An isolated antibody that specifically binds αvβ8, wherein the antibody has a heavy chain variable region which comprises a CDR1 sequence of SEQ ID NO: 5, a CDR2 sequence of SEQ ID NO: 6, and a CDR3 sequence of SEQ ID NO: 7, and a light chain variable region which comprises a CDR1 sequence of SEQ ID NO: 8, a CDR2 sequence of SEQ ID NO: 9, wherein Xaa in SEQ ID NO:9 is tyrosine, and a CDR3 sequence of SEQ ID NO: 10.

2. The isolated antibody of claim 1, wherein the isotype of the antibody is IgG1, IgG2, IgG3 or IgG4.

3. The isolated antibody of claim 1, wherein the antibody is a monoclonal antibody.

4. The isolated antibody of claim 1, wherein the antibody is a human or humanized antibody.

5. A pharmaceutical composition comprising the antibody of claim 1 and a pharmaceutically acceptable excipient.

6. An isolated nucleic acid encoding the antibody of claim 1.

7. An isolated expression vector comprising the nucleic acid of claim 6.

8. An isolated host cell comprising the vector of claim 7.

9. A pharmaceutical composition for reducing TGFβ activation in an individual comprising the antibody of any one of claims 1 to 4.

10. The pharmaceutical composition of claim 9, wherein the individual is a human.

11. The pharmaceutical composition of claim 9, wherein the individual has at least one condition selected from the group consisting of chronic obstructive pulmonary disease (COPD), asthma, arthritis, a fibrotic disorder, an inflammatory brain autoimmune disease, multiple sclerosis, a demyelinating disease, neuroinflammation, kidney disease, adenocarcinoma, squamous carcinoma, glioma, breast carcinoma, and cancer growth and metastasis, and wherein TGFβ reduction results in amelioration of the condition.

12. The pharmaceutical composition of claim 11, wherein the demyelinating disease is selected from the group consisting of transverse myelitis, Devic's disease and Guillain-Barre syndrome.

13. The pharmaceutical composition of claim 11, wherein the fibrotic disorder is selected from the group consisting of airway fibrosis, idiopathic pulmonary fibrosis, non-specific interstitial pneumonia, post-infectious lung fibrosis, diffuse alveolar damage, collagen-vascular disease associated lung fibrosis, drug-induced lung fibrosis, silicosis, asbestos-related lung fibrosis, respiratory bronchiolitis, respiratory bronchiolitis interstitial lung disease, desquamative interstitial fibrosis, cryptogenic organizing pneumonia, chronic hypersensitivity pneumonia, drug-related lung fibrosis, renal fibrosis, and liver fibrosis.

14. A method of determining the presence of integrin β8 in a biological sample in vitro comprising contacting the biological sample with an antibody of claim 1 attached to a detectable label to form a labeled antibody; and detecting the presence of the labeled antibody, thereby determining the presence of integrin β8.

15. The method of claim 14, wherein said method is used to detect a condition selected from the group consisting of chronic obstructive pulmonary disease (COPD), asthma, arthritis, a fibrotic disorder, an inflammatory brain autoimmune disease, multiple sclerosis, a demylinating disease, neuroinflammation, kidney disease, adenocarcinoma, squamous carcinoma, glioma, breast carcinoma, and cancer growth and metastasis.

16. The method of claim 15, wherein the demyelinating disease is selected from the group consisting of transverse myelitis, Devic's disease and Guillain-Barre syndrome.

17. The isolated antibody of claim 1, wherein the antibody has a light chain variable region of SEQ ID NO:4 and a heavy chain variable region of SEQ ID NO: 2.

18. The isolated antibody of claim 1, wherein the antibody has a kappa light chain variable region and a gamma heavy chain variable region.

19. The isolated antibody of claim 1, wherein the antibody has a lambda light chain variable region and a gamma heavy chain variable region.

20. The isolated antibody of claim 1, wherein the antibody binds the b8 human integrin but does not bind to b8 mouse integrin.

21. The isolated antibody of claim 1, wherein the antibody is a humanized antibody.

22. The isolated antibody of claim 1, wherein the antibody is a chimeric antibody.