amino acid residues F147, Q149, L151, Y163, S168, K170, K205, and/or L207, as numbered according to SEQ ID NO: 52 (Dagbay et al. J Biol Chem. 2020 Apr 17;295(16):5404-5418).

[166] In some embodiments, anti-pro/latent-myostatin antibodies, or antigen binding fragments thereof, of the present disclosure and the nucleic acid molecules of the present disclosure that encode the antibodies, or antigen binding fragments thereof, include the CDR amino acid sequences shown in Tables 1G-1 to 1G-3.

Table 1G-1.

Antibody	CDRH1	CDRH2	CDRH3	CDRL1	CDRL2	CDRL3
Ab1 Kabat: IMGT:	SSYGMH (SEQ ID NO: 1) GFTFSSYGMH (SEQ ID NO: 2)	VISYDGSNKYYADSVKG (SEQ ID NO: 4) ISYDGSN (SEQ ID NO: 5)	DLLVRFLEWSHYYGMDV (SEQ ID NO: 10)	SGSSSNIGSNTVH (SEQ ID NO: 12) SSNIGSNT (SEQ ID NO: 13)	SDNQRPS (SEQ ID NO: 60) SDN (SEQ ID NO: 61)	AAWDDSLNGV (SEQ ID NO: 65)
Ab2 Kabat: IMGT:	SSYGMH (SEQ ID NO: 1) GFTFSSYGMH (SEQ ID NO: 2)	VISYDGSNKYYADSVKG (SEQ ID NO: 4) ISYDGSN (SEQ ID NO: 5)	DLLVRFLEWSHYYGMDV (SEQ ID NO: 10)	SGSSSNIGSNTVH (SEQ ID NO: 12) SSNIGSNT (SEQ ID NO: 13)	SDNQRPS (SEQ ID NO: 60) SDN (SEQ ID NO: 61)	AAWDDSLNGV (SEQ ID NO: 65)
Ab3 Kabat: IMGT:	SSYGMH (SEQ ID NO: 1) GFAFSSYGMH (SEQ ID NO: 3)	VISYDGSIKYYADSVKG (SEQ ID NO: 6) ISYDGSI (SEQ ID NO: 7)	DLLVRFLEWSHKYGMDV (SEQ ID NO: 11)	SGSTSNIGSNTVH (SEQ ID NO: 14) TSNIGSNT (SEQ ID NO: 15)	SDDQRPS (SEQ ID NO: 131) SDD (SEQ ID NO: 64)	AAWDESLNGV (SEQ ID NO: 23)
Ab4 Kabat: IMGT:	SSYGMH (SEQ ID NO: 1) GFAFSSYGMH (SEQ ID NO: 3)	VISYDGSIKYYADSVKG (SEQ ID NO: 6) ISYDGSI (SEQ ID NO: 7)	DLLVRFLEWSHKYGMDV (SEQ ID NO: 11)	SGSTSNIGSNTVH (SEQ ID NO: 14) TSNIGSNT (SEQ ID NO: 15)	SDDQRPS (SEQ ID NO: 131) SDD (SEQ ID NO: 64)	AAWDESLNGV (SEQ ID NO: 23)
Ab5 Kabat: IMGT:	SSYGMH (SEQ ID NO: 1) GFAFSSYGMH (SEQ ID NO: 3)	VISYDGNNKYYADSVKG (SEQ ID NO: 8) ISYDGNN (SEQ ID NO: 9)	DLLVRFLEWSHKYGMDV (SEQ ID NO: 11)	SGSSSNIGGNTVH (SEQ ID NO: 16) SSNIGGNT (SEQ ID NO: 59)	SDDQRPS (SEQ ID NO: 131) SDD (SEQ ID NO: 64)	AAWDESLNGV (SEQ ID NO: 23)

[167] In Table 1, the single sequences of CDRH3 and CDRL3 reflect Kabat and IMGT.

Table 1G-2.

Description	Amino Acid Sequence (SEQ ID NO)	Nucleic Acid Sequence (SEQ ID NO)
Heavy chain variable region - Ab1 parental	QIQLVQSGGGVVQPGRSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVISYDGSNKYYADSVKGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCARDLLVRFLEWSHYYGMDVWGQGTTVTVSS (SEQ ID NO: 24)	CAGATCCAGCTGGTGCAGTCTGGGGGAGGCGTGGTCCAGCCTGGGAGGTCCCTGAGACTCTCCTGTGCAGCGTCTGGATTCACCTTCAGTAGCTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCAGTTATATCATATGATGGAAGTAATAAATACTATGCAGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGATCTCCTGGTGCGATTTTTGGAGTGGTCGCACT

antigen binding fragments thereof, provided herein bind within 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 or 15 amino acid residues of an epitope that is bound by any of the antibodies, or antigen binding fragments thereof, provided herein. In preferred embodiments, such antibody or antigen-binding fragment cross-competes with apitegromab for binding to human pro/latent myostatin. In some embodiments, such antibody or antigen-binding fragment binds an epitope within the prodomain of human myostatin, wherein the epitope comprises one or more amino acid residues F147, Q149, L151, Y163, S168, K170, K205, and/or L207, as numbered according to SEQ ID NO: 52 disclosed herein. In some embodiments, such antibody or antigen-binding fragment binds an epitope within the prodomain of human myostatin, wherein the epitope comprises one or more amino acid residues F147, Q149, L151, Y163, R167, S168, K170, K205, L207, E209, and/or N210, as numbered according to SEQ ID NO: 52. In some embodiments, such antibody or antigen-binding fragment comprises an HCDR3 paratope that is a variant of SEQ ID NO: 10, wherein the variant contains of up to two amino acid substitutions as compared to SEQ ID NO: 10. In some embodiments, such antibody or antigen-binding fragment comprises an HCDR3 sequence comprising a leucine at amino acid position 3 and a tryptophan at amino acid position 9, as numbered according to SEQ ID NO: 10. In some embodiments, such antibody or antigen-binding fragment comprises an HCDR3 sequence comprising a leucine at amino acid position 3, a valine at amino acid position 4, a leucine at amino acid position 7, a tyrosine at amino acid position 8, and/or a tryptophan at amino acid position 9, as numbered according to SEQ ID NO: 10.

[213] In another embodiment, an antibody, or an antigen-binding portion thereof, competes or cross-competes for binding to any of the antigens provided herein (e.g., pro/latent-myostatin) with an equilibrium dissociation constant, K_D, between the antibody and the protein of less than 10^{-8} M. In other embodiments, an antibody, or an antigen-binding portion thereof, competes or cross-competes for binding to any of the antigens provided herein with a K_D in a range from 10^{-11} M to 10^{-8} M.

[214] Aspects of the disclosure relate to antibodies, or antigen-binding portions thereof, that compete for binding to pro/latent-myostatin with any of the antibodies, or antigen binding fragments thereof, provided herein. In some embodiments, the antibody, or an antigen-binding portion thereof, binds to pro/latent-myostatin at the same epitope as any of the antibodies, or antigen-binding portions thereof, provided herein. For example, in some embodiments any of the antibodies provided herein bind at or near a tolloid cleavage site or at or near a tolloid docking site of pro/latent-myostatin. In other embodiments, any of the antibodies, or antigen binding fragments thereof, provided herein bind at or near a proprotein convertase cleavage site or at or near a proprotein convertase docking site of pro/latent-myostatin. In another embodiment, an antibody, or an antigen-binding portion thereof, competes for binding to pro/latent-myostatin with an equilibrium dissociation constant, K_D, between the antibody, or antigen-binding portion thereof, and pro/latent-myostatin of less than 10^{-6} M. In other embodiments, the antibody, or antigen-binding portion thereof, that competes with any of the antibodies, or antigen-binding portions thereof, provided herein binds to pro/latent-myostatin with a K_D in ranging from 10^{-11} M to 10^{-8} M.

[215] Any of the antibodies, or antigen binding fragments thereof, provided herein can be characterized using any suitable methods. For example, one method is to identify the epitope to which the antigen binds, or “epitope mapping.” There are many suitable methods for mapping and characterizing the location of epitopes on proteins, including solving the crystal structure of an antibody-antigen complex, competition assays, gene fragment expression assays, and synthetic peptide-based assays, as described, for example, in Chapter 11 of Harlow and Lane, Using Antibodies, a Laboratory Manual, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., 1999. In an additional example, epitope mapping can be used to determine the sequence to which an antibody, or an antigen-binding portion thereof, binds. The epitope can be a linear epitope, i.e., contained in a single stretch of