Claims

What is claimed is:

1. An isolated polynucleotide molecule comprising a nucleotide sequence that encodes a heavy chain variable region and a light chain variable region of an antibody or antigen-binding fragment thereof that binds specifically to human leptin receptor wherein:

(a) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 2; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(b) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 18; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(c) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 26; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(d) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 34; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(e) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 42; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(f) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 50; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(g) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 58; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(h) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 66; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(i) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 74; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10;

(j) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 82; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 90;

(k) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 98; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 90;

and/or

(l) the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 106; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 90.

2. The polynucleotide of claim 1 comprising:

the nucleotide sequence set forth in SEQ ID NO: 1 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 17 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 25 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 33 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 41 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 49 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 57 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 65 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 73 and SEQ ID NO: 9;
the nucleotide sequence set forth in SEQ ID NO: 81 and SEQ ID NO: 89;
the nucleotide sequence set forth in SEQ ID NO: 97 and SEQ ID NO: 89; and/or
the nucleotide sequence set forth in SEQ ID NO: 105 and SEQ ID NO: 89.

3. The polynucleotide of claim 1 wherein the heavy chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 26; and the light chain variable region comprises the amino acid sequence set forth in SEQ ID NO: 10.

4. The polynucleotide of claim 3 wherein the nucleotide sequence is set forth in SEQ ID NO: 25 and SEQ ID NO: 9.

5. A recombinant expression vector comprising the polynucleotide of claim 1.

6. A host cell comprising the vector of claim 5.