CLAIMS

What is claimed is:

1. An antibody, or antigen binding fragment thereof, comprising:

(a) a heavy chain variable (VH) domain comprising complementarity-determining regions (CDRs) CDR-H1, CDR-H2, and CDR-H3 comprising the amino acid sequences of SEQ ID NOs: 13, 14, and 15, respectively; and

(b) a light chain variable (VL) domain comprising CDR-L2, and CDR-L3 comprising the amino acid sequences of SEQ ID NO: 17 and SEQ ID NO:18, respectively; and a CDR-L1 comprising the amino acid sequence of SEQ ID NO: 16 or the amino acid sequence of SEQ ID NO: 16 with the NG motif replaced by NA, QG, or KG;

wherein said antibody, or antigen-binding fragment thereof, specifically binds to the extracellular domain of human killer cell lectin-like receptor subfamily G member 1 (KLRG1) and the extracellular domain of cynomolgus monkey KLRG1.

2. The antibody, or antigen binding fragment thereof, of claim 1, wherein CDR-L1 (SEQ ID NO: 16) has the NG motif substituted with NA.

3. The antibody, or antigen binding fragment thereof, of claim 1 or 2 comprising

(i) the VH domain sequence of SEQ ID NO: 3 and the VL domain sequence of SEQ ID NO: 4 or the VL domain sequence of SEQ ID NO:4, wherein the NG motif is substituted with NA in the CDR-L1; or

(ii) the VH domain sequence of SEQ ID NO: 27 and the VL domain sequence of SEQ ID NO: 28 or the VL domain sequence of SEQ ID NO:28, wherein the NG motif is substituted with NA in the CDR-L1.

4. The antibody, or antigen binding fragment thereof, of any one of claims 1-3, wherein the antibody specifically binds to an amino acid sequence that is at least

95% identical to any sequence of at least 100 contiguous amino acids of at least one sequence selected from group consisting of SEQ ID NO:89 and SEQ ID NO:90.

5. The antibody, or antigen binding fragment thereof, of claim 4, wherein the antibody specifically binds to the extracellular domain of KLRG1 with an affinity, as expressed in K_D as measured by bio-layer interferometry, of at least 2 nM, 1nM, or 100 pM.

6. The antibody, or antigen binding fragment thereof, of any one of claims 1-5, wherein the antibody is humanized.

7. The antibody, or antigen binding fragment thereof, of any one of claims 1-6, wherein the antibody is IgG_1 or IgG_4.

8. A pharmaceutical composition comprising the antibody of any one of claims 1-7 and a pharmaceutically acceptable carrier.

9. Use of the pharmaceutical composition of claim 8 for the manufacture of a medicament for treatment of cancer or an infectious disease.

10. An isolated nucleic acid encoding the antibody of any one of claims 1-7.

11. An expression vector comprising the nucleic acid of claim 10.

12. A host cell comprising the expression vector of claim 11.

13. The host cell of claim 12, wherein the host cell is selected from the group consisting of an *E. Coli* bacterium, a Chinese hamster ovary cell, a HeLa cell, and a NS0 cell.

14. The nucleic acid of claim 10, wherein the nucleic acid encodes the amino acid sequence set out in SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:27, or SEQ ID NO:28.