CLAIMS

What is claimed is:

1. A C-type lectin domain family 9 member A (Clec9A) binding agent comprising an amino acid sequence having at least 95% identity with SEQ ID NO: 332, wherein the Clec9A binding agent comprises three complementarity determining regions (CDR1, CDR2, and CDR3), wherein:

(a) CDR1 comprises an amino acid sequence of SEQ ID NO: 51 or 56;

(b) CDR2 comprises an amino acid sequence of SEQ ID NO: 136 or 191; and

(c) CDR3 comprises an amino acid sequence of SEQ ID NO: 202.

2. The Clec9A binding agent of claim 1, wherein the amino acid sequence is selected from SEQ ID NOs: 333-336.

3. The Clec9A binding agent of any one of the above claims, wherein the Clec9A binding agent comprises one or more signaling agents.

4. The Clec9A binding agent of claim 3, wherein the signaling agent is selected from one or more of an interferon, an interleukin, and a tumor necrosis factor, any of which are optionally modified.

5. The Clec9A binding agent of any one of the above claims, wherein the Clec9A binding agent comprises one or more additional targeting moieties.

6. The Clec9A binding agent of claim 5, wherein the one or more additional targeting moieties recognize and optionally functionally modulate a tumor antigen.

7. The Clec9A binding agent of claim 5, wherein the one or more additional targeting moieties recognize and optionally functionally modulate an antigen on an immune cell.

8. The Clec9A binding agent of claim 7, wherein the immune cell is selected from a T cell, a B cell, a dendritic cell, a macrophage, neutrophil, and a NK cell.

9. The Clec9A binding agent of any of the above claims, wherein the Clec9A binding agent recruits cytotoxic T cells to tumor cells or to the tumor environment.

10. The Clec9A binding agent of any of the above claims, wherein the Clec9A binding agent recognizes and binds Clec9A without functionally modulating its activity.

11. A recombinant nucleic acid composition encoding the Clec9A binding agents of any one of the above claims.

12. A host cell comprising a nucleic acid of claim 11.

13. A chimeric protein comprising:

(a) a Clec9A binding agent of any one of claims 1-10; and

(b) a modified human IFN-α2 comprising one or more mutations at positions R120, M148, R149, and L153, relative to SEQ ID NO: 337 or 338; and

wherein the Clec9A binding agent and the modified human IFN-α2 are optionally connected with one or more linkers.

14. The chimeric protein of claim 13, wherein the modified human IFN-α2 comprises one or more mutations selected from R120E, R149A, and L153A.

15. The chimeric protein of claim 13, wherein the modified human IFN-α2 comprises a R120E mutation and either a R149A or a L153A mutation.

16. A chimeric protein comprising:

(a) a Clec9A binding agent of any one of claims 1-10; and

(b) a modified human IFN-β comprising one or more mutations at positions W22, R27, L32, R35, V148, L151, R152, and Y155, relative to SEQ ID NO: 339; and

wherein the Clec9A binding agent and the modified human IFN-β are optionally connected with one or more linkers.

17. The chimeric protein of claim 16, wherein the modified human IFN-β comprises one or more mutations selected from W22G, R27G, L32A, L32G, R35A, R35G, V148G, L151G, R152A, R152G.