CLAIMS

What is claimed is:

1. A radiolabeled antibody conjugate comprising an antibody or antigen binding fragment thereof that binds lymphocyte activation gene-3 (LAG3) and a positron emitter, wherein the antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (HCDRs) and three light chain complementarity determining regions (LCDRs) within the heavy chain variable region (HCVR) and light chain variable region (LCVR) amino acid sequence pair selected from the group consisting of SEQ ID NOs: 2/10, 210/218, 226/234, 354/362, 418/426, 458/522, 474/522, and 554/562.

2. The conjugate of claim 1, further comprising a chelating moiety.

3. The conjugate of claim 1, wherein said antibody or antigen-binding fragment thereof is covalently bonded to one or more moieties of Formula (**A**):

$$-L-M_Z$$

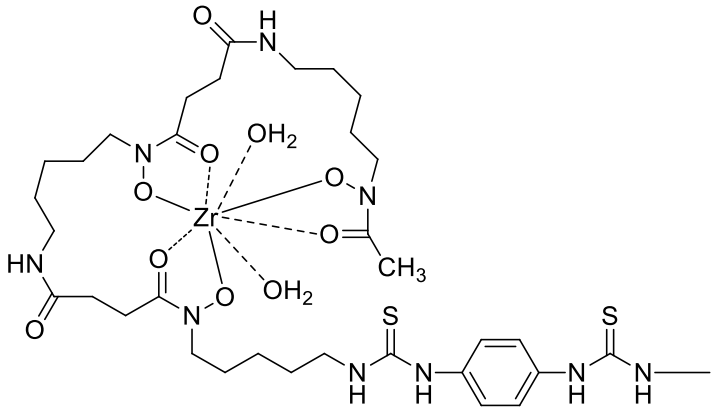
(**A**)

wherein L is a chelating moiety; M is a positron emitter; and z, independently at each occurrence, is 0 or 1; and wherein at least one of z is 1.

4. The conjugate of claim 2, wherein the chelating moiety comprises desferrioxamine.

5. The conjugate of claim 1, wherein the positron emitter is ^{89}Zr.

6. The conjugate of claim 3, wherein -L-M is



,wherein Zr is the positron emitter, ^{89}Zr.

7. The conjugate of claim 3, wherein the antibody or antigen-binding fragment thereof is covalently bonded to one, two, or three moieties of Formula (**A**).

8. The conjugate of claim 1, wherein the antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (HCDRs) in a heavy chain variable region (HCVR), wherein the HCVR has an amino acid sequence of SEQ ID NO: 418; and three light chain complementarity determining regions (LCDRs) in a light chain variable region (LCVR), wherein the LCVR has an amino acid sequence of SEQ ID NO: 426.

9. The conjugate of claim 1, wherein the antibody or antigen-binding fragment thereof comprises within the HCVR/LCVR amino acid sequence pair of SEQ ID NOs: 418/426 a heavy chain complementarity determining region (HCDR)-1 comprising SEQ ID NO: 420; an HCDR2 comprising SEQ ID NO: 422; and an HCDR3 comprising SEQ ID NO: 424; a light chain complementarity determining region (LCDR)-1 comprising SEQ ID NO: 428; an LCDR2 comprising SEQ ID NO: 430; and an LCDR3 comprising SEQ ID NO: 432.

10. The conjugate of claim 1, wherein the antibody comprises an HCVR of SEQ ID NO: 418; and an LCVR of SEQ ID NO: 426.