WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule encoding a Tn3 scaffold comprising a CD40L-specific monomer subunit, wherein the CD40L-specific monomer subunit comprises seven beta strands designated A, B, C, D, E, F, and G, and six loop regions designated AB, BC, CD, DE, EF, and FG, wherein:

(a) the AB loop comprises the amino acid sequence of SEQ ID NO: 4;

(b) the BC loop comprises the amino acid sequence of one of SEQ ID NOs: 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93 or 168 at the BC loop;

(c) the CD loop comprises the amino acid sequence of SEQ ID NO: 6;

(d) the DE loop comprises the amino acid sequence of one of SEQ ID NOs: 94, 95, 96, 97, 98 or 169;

(e) the EF loop comprises the amino acid sequence of SEQ ID NO: 8; and

(f) the FG loop comprises the amino acid sequence of one of SEQ ID NOs: 9, 99, 139 or 170.

2. The isolated nucleic acid of claim 1, wherein the Tn3 scaffold comprises two CD40L-specific monomer subunits connected in tandem by a peptide linker.

3. The isolated nucleic acid of claim 2, wherein the Tn3 scaffold binds CD40L and prevents binding of CD40L to CD40 and/or disrupts CD40 mediated signaling.

4. The isolated nucleic acid of claim 1, wherein:

(a) the BC loop comprises the amino acid sequence of SEQ ID NO:83, the DE loop comprises the amino acid sequence of SEQ ID NO:94, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(b) the BC loop comprises the amino acid sequence of SEQ ID NO:83, the DE loop comprises the amino acid sequence of SEQ ID NO:94, and the FG loop comprises the amino acid sequence of SEQ ID NO:99; or

(c) the BC loop comprises the amino acid sequence of SEQ ID NO:84, the DE loop comprises the amino acid sequence of SEQ ID NO:95, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(d) the BC loop comprises the amino acid sequence of SEQ ID NO:85, the DE loop comprises the amino acid sequence of SEQ ID NO:94, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(e) the BC loop comprises the amino acid sequence of SEQ ID NO:86, the DE loop comprises the amino acid sequence of SEQ ID NO:96, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(f) the BC loop comprises the amino acid sequence of SEQ ID NO:87, the DE loop comprises the amino acid sequence of SEQ ID NO:97, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(g) the BC loop comprises the amino acid sequence of SEQ ID NO:88, the DE loop comprises the amino acid sequence of SEQ ID NO:95, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(h) the BC loop comprises the amino acid sequence of SEQ ID NO:89, the DE loop comprises the amino acid sequence of SEQ ID NO:94, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(i) the BC loop comprises the amino acid sequence of SEQ ID NO:90, the DE loop comprises the amino acid sequence of SEQ ID NO:94, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(j) the BC loop comprises the amino acid sequence of SEQ ID NO:91, the DE loop comprises the amino acid sequence of SEQ ID NO:95, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(k) the BC loop comprises the amino acid sequence of SEQ ID NO:92, the DE loop comprises the amino acid sequence of SEQ ID NO:98, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139; or

(l) the BC loop comprises the amino acid sequence of SEQ ID NO:93, the DE loop comprises the amino acid sequence of SEQ ID NO:94, and the FG loop comprises the amino acid sequence of SEQ ID NO:9 or 139.

5. The isolated nucleic acid molecule of claim 1, wherein:

(a) the A beta strand consists of the amino acid sequence of SEQ ID NO:11;

(b) the B beta strand consists of the amino acid sequence of SEQ ID NO:12;

(c) the C beta strand consists of the amino acid sequence of SEQ ID NO:13 or 14;

(d) the D beta strand consists of the amino acid sequence of SEQ ID NO:15;

(e) the E beta strand consists of the amino acid sequence of SEQ ID NO:16;

(f) the F beta strand consists of the amino acid sequence of SEQ ID NO:17; and

(g) the G beta strand consists of the amino acid sequence of SEQ ID NO:18.

6. The isolated nucleic acid molecule of claim 1, wherein the Tn3 scaffold comprises the amino acid sequence of one of SEQ ID NOs: 134, 135, 144, 145, 166, 205, 206, 207 or 208.

7. The isolated nucleic acid molecule of claim 2, wherein the peptide linker comprises amino acid sequence $(G_mX)_n$, wherein:
   (a) X is Serine, Alanine, Glycine, Leucine, Isoleucine or Valine;
   (b) m and n are integers;
   (c) m is 1, 2, 3 or 4; and
   (d) n is 1, 2, 3, 4, 5, 6 or 7.

8. The isolated nucleic acid molecule of claim 7, wherein the peptide linker comprises the amino acid sequence of SEQ ID NO: 131, SEQ ID NO: 132, SEQ ID NO: 142, or SEQ ID NO: 143.

9. An isolated nucleic acid molecule encoding a Tn3 scaffold fusion protein, wherein the fusion protein comprises a Tn3 scaffold protein and a heterologous moiety, wherein:

the Tn3 scaffold protein comprises a CD40L-specific monomer subunit, wherein the CD40L-specific monomer subunit comprises seven beta strands designated A, B, C, D, E, F, and G, and six loop regions designated AB, BC, CD, DE, EF, and FG, wherein the AB loop comprises SEQ ID NO; 4; the BC loop comprises the amino acid sequence as shown in one of SEQ ID NOs: 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93 or 168; the CD loop comprises the amino acid sequence as shown in SEQ ID NO: 6; the DE loop comprises the amino acid sequence as shown in one of SEQ ID NOs: 94, 95, 96, 97, 98, or 169; the EF loop comprises the amino acid sequence as shown in SEQ ID NO:8; and the FG loop comprises the amino acid sequence as shown in one of SEQ ID NOs: 9, 99, 139, or 170, and wherein the encoded Tn3 scaffold specifically binds to CD40L; and

wherein the heterologous moiety is biotin, an albumin, a human serum albumin (HSA), an HSA FcRn binding portion, an antibody, a domain of an antibody, an antibody fragment, a single chain antibody, a domain antibody, an albumin binding domain, an enzyme, a ligand, a receptor, a binding peptide, a non-FnIII scaffold, an epitope tag, or a cytokine.

10. The isolated nucleic acid molecule of claim 9, wherein the heterologous moiety is HSA.

11. The isolated nucleic acid molecule of claim 10, wherein the HSA comprises the amino acid sequence of one of SEQ ID NOs: 133 or 138.

12. The isolated nucleic acid molecule of claim 9, wherein the A beta strand consists of the amino acid sequence of SEQ ID NO:11, the B beta strand consists of the amino acid sequence of SEQ ID NO:12, the C beta strand consists of the amino acid sequence of SEQ ID NO:13 or 14, the D beta strand consists of the amino acid sequence of SEQ ID NO:15, the E beta strand consists of the amino acid sequence of SEQ ID NO:16, the F beta strand consists of the amino acid sequence of SEQ ID NO:17, and the G beta strand consists of the amino acid sequence of SEQ ID NO:18.

13. The isolated nucleic acid molecule of claim 9, wherein the Tn3 scaffold comprises two CD40L-specific monomer subunits connected in tandem by a peptide linker.

14. The isolated nucleic acid molecule of claim 13, wherein each of the two CD40L-specific monomer subunits comprise the amino acid sequence of one of SEQ ID NOs: 20, 22, 24, 26, 28, 30, 32, 34, 36, 40, 42, or 146.

15. The isolated nucleic acid molecule of claim 14, wherein the heterologous moiety is HSA or the HSA FcRn binding portion.

16. The isolated nucleic acid molecule of claim 15, wherein the Tn3 scaffold fusion protein comprises the amino acid sequence as shown in SEQ ID NO:135 or 145.

17. An expression vector comprising the nucleic acid of claim 1.

18. A host cell comprising the expression vector of claim 17.

19. A method of producing a Tn3 scaffold comprising: culturing the host cell of claim 18 under conditions in which the Tn3 scaffold encoded by the nucleic acid molecule is expressed.

20. The isolated nucleic acid molecule of claim 4, wherein the BC loop comprises the amino acid sequence of SEQ ID NO:86, the DE loop comprises the amino acid

sequence of SEQ ID NO:96, and the FG loop comprises the amino acid sequence of SEQ ID NO:139.

21. The isolated nucleic acid molecule of claim 14, wherein each of the two CD40L-specific monomer subunits comprise the amino acid sequence of SEQ ID NO:146.

22. The isolated nucleic acid molecule of claim 16, wherein the Tn3 scaffold fusion protein comprises the amino acid sequence as shown in SEQ ID NO: 145.