CLAIMS

What is claimed:

1. A human hypo-immunogenic pluripotent (HIP) cell that (a) does not express β-2 microglobulin (B2M) protein, (b) does not express CIITA protein, (c) expresses CD47 at a higher level than in a parental pluripotent cell, and (d) expresses a suicide gene that is activated by a trigger that causes the HIP cell to die, wherein the HIP cell further retains differentiation potential into any one of an endothelial, smooth muscle, cardiomyocyte, islet, neuronal, or a retinal pigment epithelium (RPE) cell.

2. The HIP cell of claim 1, wherein the HIP cell shows increased expression of CD47 protein as a result of a modification to an endogenous CD47 gene locus.

3. The HIP cell of claim 1, wherein the increased expression of CD47 protein results from a CD47 transgene.

4. The HIP cell of any one of claims 1-3, wherein the CD47 protein has at least a 90% sequence identity to SEQ ID NO: 3.

5. The HIP cell of any one of claims 1-4, wherein the HIP cell does not express CIITA protein because a gene encoding the CIITA protein is knocked out.

6. The HIP cell of claim 5, wherein the CIITA protein has at least 90% sequence identity to SEQ ID NO: 2.

7. The HIP cell of any one of claims 1-6, wherein the HIP cell does not express B2M protein because a gene encoding the B2M protein is knocked out.

8. The HIP cell of claim 7, wherein the B2M protein has at least 90% sequence identity to SEQ ID NO: 1.

9. The HIP cell of any one of claims 1-8, wherein the suicide gene is a herpes simplex virus thymidine kinase gene (HSV-tk) and the trigger is ganciclovir.

10. The HIP cell of claim 9, wherein the HSV-tk gene encodes a protein comprising the sequence of SEQ ID NO: 4.

11. The HIP cell of any one of claims 1-8, wherein the suicide gene is an *Escherichia coli* cytosine deaminase gene (EC-CD) and the trigger is 5-fluorocytosine (5-FC).

12. The HIP cell of claim 11, wherein the EC-CD gene encodes a protein comprising the sequence of SEQ ID NO: 5.

13. The HIP cell of any one of claims 1-8, wherein the suicide gene encodes an inducible Caspase protein and the trigger is a chemical inducer of dimerization (CID).

14. The HIP cell of claim 13, wherein the inducible Caspase protein comprises the sequence of SEQ ID NO: 6 and the CID is AP1903.