CLAIMS

1. A method for inducing cell death of undifferentiated stem cells without inducing cell death of cardiomyocytes, by performing cell culture in a cell culture medium having any of the following amino acid profile:
(a) a glutamine content that is reduced to less than 1% while the contents of amino acids other than glutamine are not reduced;
(b) a glutamine and arginine content that is reduced to less than 1% while the contents of amino acids other than glutamine and arginine are not reduced;
(c) a glutamine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, serine and glycine are not reduced; and
(d) a glutamine, arginine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, arginine, serine and glycine are not reduced.

2. The method according to claim 1, wherein the undifferentiated stem cells are pluripotent stem cells or multipotent stem cells.

3. The method according to any one of claims 1-2, wherein the cell culture is continued for 12-360 hours under any of the above particular amino acid-free conditions.

4. A method for selecting cardiomyocytes, comprising culturing a mixture of cardiomyocytes and non-cardiomyocytes in a cell culture medium which is supplemented with lactate, wherein the cell culture medium has less than 10% of sugar and any of the following amino acid profile:
(a) a glutamine content that is reduced to less than 1% while the contents of amino acids other than glutamine are not reduced;
(b) a glutamine and arginine content that is reduced to less than 1% while the contents of amino acids other than glutamine and arginine are not reduced;
(c) a glutamine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, serine and glycine are not reduced; and
(d) a glutamine, arginine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, arginine, serine and glycine are not reduced.

5. A method for selecting cardiomyocytes, comprising culturing a mixture of cardiomyocytes and non-cardiomyocytes in a cell culture medium which is supplemented with pyruvate, wherein the cell culture medium has less than 10% of sugar and any of the following amino acid profile:
(a) a glutamine content that is reduced to less than 1% while the contents of amino acids other than glutamine are not reduced;
(b) a glutamine and arginine content that is reduced to less than 1% while the contents of amino acids other than glutamine and arginine are not reduced;
(c) a glutamine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, serine and glycine are not reduced; and
(d) a glutamine, arginine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, arginine, serine and glycine are not reduced.

6. A method for selecting cardiomyocytes, comprising culturing a mixture of cardiomyocytes and non-cardiomyocytes in a cell culture medium which is supplemented with a fatty acid, wherein the cell culture medium has less than 10% of sugar and any of the following amino acid profile:
(a) a glutamine content that is reduced to less than 1% while the contents of amino acids other than glutamine are not reduced;
(b) a glutamine and arginine content that is reduced to less than 1% while the contents of amino acids other than glutamine and arginine are not reduced;
(c) a glutamine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, serine and glycine are not reduced; and
(d) a glutamine, arginine, serine and glycine content that is reduced to less than 1% while the contents of amino acids other than glutamine, arginine, serine and glycine are not reduced.

7. The method according to any one of claims 4-6, wherein the non-cardiomyocytes are undifferentiated stem cells, differentiated non-cardiomyocytes, or established cells.

8. The method according to any one of claims 4-7, wherein the cell culture is continued for 12-360 hours under any of the above particular amino acid-free conditions.

9. The method according to any one of claims 4-8, wherein the cell culture medium is supplemented with ascorbate or albumin.