CLAIMS

1. A method for identifying the presence of a multipotential cell in a cell sample, the method comprising identifying cells in the sample that express the HSP-90beta marker.

2. A method according to Claim 1, in which the identification of cells in a sample that express the HSP-90beta marker comprises:

obtaining a cell sample from a tissue source;

contacting the cell sample with a HSP-90beta binding agent under conditions suitable for binding of HSP-90beta to the HSP-90beta binding agent; and

detecting the presence of the HSP-90beta binding agent bound to cells in the sample, in which the presence of multipotential cells is indicated by cells that bind to the HSP-90beta binding agent.

3. A method according to Claim 1 or 2, in which the cell sample is derived from placenta, adipose tissue, teeth, dental pulp, skin, liver, kidney, heart, retina, brain, hair follicles, intestine, lung, spleen, lymph node, thymus, ovary, pancreas, bone, ligament, bone marrow, tendon or skeletal muscle.

4. A method according to Claim 2 or 3, in which the HSP-90beta binding agent is an antibody or antigen-binding fragment or derivative thereof.

5. A method according to Claim 4, in which the HSP-90beta binding agent or antigen binding fragment or derivative thereof selected from the group consisting of:

(i) a STRO-4 monoclonal antibody;

(ii) a chimeric antibody comprising heavy and light chain variable regions from STRO-4 and human heavy and light chain constant regions; and

(iii) a humanized antibody comprising at least one complementarity determining region (CDR) from STRO-4 and human framework and constant region sequences.

7. A method according to Claim 4, in which the HSP-90beta binding agent or antigen-binding fragment or derivative thereof is a STRO-4 antibody or an antigen-binding fragment of the STRO-4 antibody and in which the STRO-4 antibody is produced by the hybridoma cell line deposited with ATCC on 10 July 2008 under the provisions of the Budapest Treaty under deposit accession number PTA-9362.

8. An enriched population of multipotential cells obtained by a method of enriching a sample of cells for multipotential cells, the method comprising preparing a sample of cells from a tissue source and enriching for cells that express the HSP-90beta marker.

9. An expanded cell population obtained by culturing an enriched population of multipotential cells according to Claim 8.

10. A method of generating a tissue specific committed cell population, the method comprising:

culturing a population of multipotential cells according to Claim 9 in the presence of one or more stimulatory factors, and

subjecting the cultured population of multipotential cells to conditions biasing differentiation of the multipotential cells to a specific tissue type so as to generate a tissue specific, committed cell population.

11. A method according to Claim 10, in which the tissue type is selected from the group consisting of placental tissue, cardiac muscle, vascular tissue, bone tissue, cartilage tissue, fat tissue, neural tissue, smooth muscle and endothelial tissue.

12. Use of an enriched population according to Claim 8 or an expanded population according to Claim 9 in the manufacture of a medicament for generating or repairing tissue in a subject.