Claims

1. Use of a composition comprising a population of isolated human umbilical cord-derived cells in the manufacture of a medicament for reducing amyloid plaque formation or diminishing amyloid plaques in a patient having symptoms of Alzheimer's disease, wherein the isolated human umbilical cord-derived cells are obtained from human umbilical cord tissue substantially free of blood, wherein the isolated cells self-renew and expand in culture and wherein the cells:

express each of CD10, CD13, CD44, CD73, CD90, PDGFr-alpha, and HLA-A,B,C; and

do not express CD31, CD34, CD45, CD117, CD141, and HLA-DR,DP,DQ.

2. The use of claim 1, said composition further comprising pharmaceutically acceptable carriers and/or diluents selected from the group consisting of: saline, aqueous buffer solutions, hydrogels, biomatrices, scaffolds, solvents, artificial cerebral spinal fluid, dispersion media composition and a mix thereof.

3. The use of claim 1, wherein said composition is formulated to enhance neural cell survival, differentiation or phagocytic activity of the cells.

4. The use of claims 1, 2 or 3, wherein the human umbilical cord tissue-derived cells have increased expression for a gene encoding interleukin 8 and reticulon 1 relative to a human cell that is a fibroblast, a mesenchymal stem cell, or an iliac crest bone marrow cell.

5. The use of any of claims 1, 2, 3 or 4, wherein the cells secrete GCP-2.

6. The use of any of claims 1, 2, 3, 4 or 5, wherein the composition further comprises one other agent selected from the group consisting of extracellular matrix components, microcarriers, microparticulate systems, anti-apoptotic agents, anti-inflammatory compounds, immunosuppressive agents, immunomodulatory agents, and anti-oxidants.

7. The use of any of claims 1, 2, 3, 4, 5 or 6, wherein the composition further comprises neurotrophic factors.

8. The use of any of claims 1, 2, 3, 4, 5, 6 or 7, wherein the population of human umbilical cord-derived cells is pre-treated with electrical stimulation.