Claims:

1. A method for producing multipotent, pluripotent, and/or self-renewing cells from the selected cells, comprising:

transfecting selected cells obtained by selecting cells from the group of somatic cells with nucleotide sequences encoding the "long" (PRR insert +) isoform(s) of the mammalian numb protein and with an additional nucleotide sequence encoding Notch; and

growing the selected cells in a growth medium comprising cytokines selected from EGF, bFGF, LIF, steel factor, IL-6, hyper IL-6, IL-7, oncostatin-M, cardiotrophin-1 and other growth enhancing cytokines effective that the selected cells expand at a rate, wherein said rate is determined from the doubling times of the selected cells in said growth culture medium; and maintaining the cells under these culture conditions until the desired cell number is achieved.