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(54) **Title**: NOVEL VIRAL VECTOR CONSTRUCT FOR NEURON SPECIFIC OPTIMIZED CONTINUOUS DOPA SYNTHESIS IN VIVO

(57) **Abstract**: The present invention relates to a one-vector expression system comprising a sequence encoding two polypeptides, such as tyrosine hydroxylase (TH) and GTP- cyclohydrolase 1 (GCH1). The two polypeptides can be should preferentially be expressed at a ratio between 3:1 and 15:1, such as between 3:1 and 7:1. The invention is useful in the treatment of catecholamine deficient disorders, such as dopamine deficient disorders including but not limited to Parkinson's Disease. Moreover, the present invention provides a method to deliver the vector construct in order to limit the increased production of the catecholamine to the cells in need thereof.