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(54) Title: METHODS FOR REDUCING GLYCOSPHINGOLIPID CONCENTRATION IN BRAIN TISSUE AND METHODS OF TREATMENT OF NEURODEGENERATIVE DISEASES INVOLVING THE SAME

(57) Abstract: Provided are methods for treating or preventing Parkinson's disease or dementia with Lewy Bodies in a human subject. The methods target lipid dysregulation in brain tissue of the subject and can, in particular, reduce the concentration of glycosphingolipids in brain tissue. The methods use quinuclidine compounds of formula (I), or pharmaceutically acceptable prodrugs or salts thereof. In particular, the human subject may be a carrier of one or more glucocerebrosidase 1 gene (*GBA1*) mutations, e.g. a heterozygous carrier of *GBA1* mutations. Also provided are methods for assessing the effectiveness of treatments as described herein.