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(54) Title: SYNTHETIC MECP2 SEQUENCE FOR PROTEIN SUBSTITUTION THERAPY

(57) Abstract: The invention relates to the MeCP2 protein and its use in protein substitution therapy. More specifically, the invention relates to codon-optimized nucleic acid sequences for the expression of MeCP2 proteins, methods for creating such a nucleic acid sequence and expressing such a protein, fusions of a protein of the invention to a transduction domain, and vectors and host cells comprising a protein of the invention. Further, the invention relates to uses of nucleic acids or proteins of the invention in medicine, pharmaceutical compositions comprising nucleic acid sequences and proteins of the invention, as well as methods for the treatment, prevention, and/or therapy of neurodegenerative or neurodevelopmental diseases including Rett syndrome.