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(54) Title: HUMAN-ENZYME MEDIATED DEPLETION OF HOMOCYSTEINE FOR TREATING PATIENTS WITH HYPERHOMOCYSTEINEMIA AND HOMOCYSTINURIA

(57) Abstract: Methods and compositions relating to the engineering of an improved protein with homocyst(e)inase enzyme activity are described. For example, there are disclosed modified cystathionine-γ-lyase (CGL) enzymes comprising one or more amino acid substitutions and capable of degrading homocysteine. Furthermore, provided are compositions and methods for the treatment of homocystinuria or hyperhomocysteinemia with homocysteine depletion using the disclosed enzymes or nucleic acids.



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