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Parkinson's disease and movement disorders-inhibition of high mobility group box 1 (HMGB1) as a neuroprotective treatment in the MPTP mouse model of Parkinson's disease

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Background: High-mobility group box 1 (HMGB1) is a nuclear and cytosolic protein that is released during tissue damage from immune and non-immune cells – including microglia and neurons. HMGB1 is implicated in the progression of numerous chronic in ammatory and autoimmune diseases. ere is increasing evidence from in vitro studies that HMGB1 may link the two main pathophysiological components of Parkinson's disease (PD), i.e. progressive dopaminergic cell degeneration and chronic neuroin ammation both of which underlie the mechanistic basis of PD progression.

Materials & Methods: Pharmacological trials - Male mice C57BL6J ten weeks old were randomly divided in four experimental groups (n=5 per group). i) saline control group, ii) MPTP treated groups (sub-acute regimen 30 mg/kg of MPTP intraperitoneally (i.p.) once a day for ve consecutive days), iii) MPTP treated group plus i.p. dose of 50mg/kg glycyrrhizin, iv) MPTP treated group plus i.p. dose of 200 ug HMGB1 neutralizing antibody. HMGB1 nuclear translocation was assessed in mice and human brain tissue via co-immunolocalization in three di erent nigral cell populations: tyrosine hydroxylase (TH) positive neurons, microglia and astrocytes. Western blotting was performed on protein samples extracted from ventral midbf PD pl migy-7 0 48

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