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Curcumin (diferuloylmethane), a polyphenol extracted from the plant Curcuma longa, is widely used in food both in India and China. It is also used in therapeutic uses. In this study we used curcumin and its derivative rst time to treat neurodegenerative disease, Parkinson's disease (PD). In this disease the increased reactive oxygen species (ROS) accumulation and oxidative damage of lipids, nucleic acids and proteins occur. erapeutic use of curcumin for this neurodegenerative disease appears multifactorial which regulates the enzymes, cytokines, monoamine oxidase-B inhibition, and transcription factors. We investigated free radicals, enzymatic and non-enzymatic antioxidants in on methyl 4-phenyl 1, 2, 3 4 tetra hydro pyridine (MPTP). In this model depletion of dopamine (DA) and DOPAC (3, 4 dihydroxy phenyl acetic acid) occurs with increased activity of monoamine oxidase (MOA-B). We used HPLC with electrochemical detection to measure DA and DOPAC respectively while MAO-B was assayed by spectro ourimetry using the conversion of uorogenic substrate, kyuramine. Systemic administration of curcumin (80 mg/kg i.p) and tetrahydro curcumin (60mg/kg ip) signi cantly reversed the MPTP induced depletion of DA and DOPAC. e MOA-B activity was also signi cantly inhibited by these compounds. e results showed that curcumin and its derivative reversed the MPTP induced depletion of DA and DOPAC which may in part be due to inhibition of MAO-B activity. is result also supported by free radical estimation, antioxidant assay and electron microscopical observations. In conclusion both curcumin and its metabolite exert neuroprotection against MPTP induced neurotoxicity.

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