20C, a novel bibenzyl compound, protected mice from MPTP/p injuries by regulating a-synuclein related inflammatory responds

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The novel bibenzyl compound 20C from *Gastrodia elata* plays a neuroprotective role in vitro, but its effects in vivo is unknown. In this study, we studied the effects of 20C and its associated-mechanisms on these effects on 1-methyl-4phenyl-1, 2, 3, 6-tetrahydropyridine/probenecide (MPTP/p) mouse model. Experiment results showed that the neuroprotective effects of 20C were as follows: improving behavioral deficit; attenuating DA depletion; reducing dopaminergic neuron loss; protecting BBB structure; ameliorating a-synuclein dysfunction, suppressing glial activation and regulating both the NF- κ B signaling and the NLRP3 inflammasome pathways. All these results suggested that 20C might prevent the neurodegeneration of chronic MPTP/p treated mouse through regulating the a-synuclein related inflammatory responds, including BBB damages, glial activation, NF- κ B signaling and NLRP3 inflammasome pathway.

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