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## (57) Abstract

An oral formulation has been developed to address neurobehavioral alterations caused by prolonged exposure to chronic unpredictable stress. This formulation includes Piceatannol, a naturally occurring polyphenol known for its antioxidant, anti-aging, and anti-inflammatory properties, and a process that enhances its therapeutic potential. The formulation provides neuroprotective effects by targeting various neurological and behavioral aspects. such as rescuing mitochondrial biogenesis, inhibiting oxidative stress-induced autophagy, mitigating neuroinflammation and neurodegeneration, and improving anxiety, depression, and memory dysfunction. Additionally, the formulation may include pharmaceutically acceptable excipients and is more effective in treating stress-related neurobehavioral disorders compared to conventional treatments. Reference Fig 1

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