PYRAZOLOPYRIMIDINE AND SULFORAPHANE DERIVATIVES AS CANDIDATES WITH ANTIOXIDANT-INDUCING EFFECTS FOR PARKINSON DISEASE THERAPEUTICS

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Our research target is to develop a novel drug candidate with excellent in vitro/vivo efficacies on Parkinson disease models. Development of chemical libraries via chemoinformatics, molecular modeling and medicinal chemistry based on core structures of sulforaphane targeting dopamine quinine and oxidative stress will be discussed. A wide variety of in vitro Parkinson models and cell death/survival tests were utilized to screen neuroprotective effects of our chemical libraries. Anti-inflammatory effect was also evaluated in activated microglial system. Compounds with significant protection and/or anti-inflammatory effect as well as good pharmakokinetic profiles were selected. Their anti-parkinson effects were then further tested via MPTP-administered animal models of Parkinson’s disease for the survival of substantia nigral dopaminergic neurons and neuroinflammation. Changes in motor deficit were also evaluated using various motor tests.