A signed statement by the applicant that the research works under reference has not been given any award.

This is to certify that the work under reference has not been given any award from any society of scientific body. The work under reference has been in collaboration of biologist but the conceptualization and execution of the experimental work was done by my students.

This work has led the discovery of low nano molar *in vitro* and *in vivo* antimalarial and anti-Parkinson agents with no toxicity. Some of these compounds activates Nurr1 enzyme and protects the dopamine neurons hence showed a great potential to be developed as a drug for the treatment of Parkinson`s disease and Boston based pharma industry NURRON has taken up these molecules for development as a drug.

All the publications mentioned in the CV and list of best papers, the work was designed and conceived by the undersigned. In the medicinal chemistry work, collaborator has done the biological study part but in catalysis work only the PhD students associated with me has been the co-author of the papers.

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An optimized Nurr1 agonist provides disease-modifying effects in Parkinson's disease models

WK and MT Equal contribution

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The nuclear receptor, Nurr1, is critical for both the development and maintenance of midbrain dopamine neurons, representing a promising molecular target for Parkinson's disease (PD). We previously identified three Nurr1 agonists (amodiaquine, chloroquine and glafenine) that share an identical chemical scaffold, 4-amino-7-chloroquinoline (4A7C), suggesting a structure-activity relationship. Herein we report a systematic medicinal chemistry search in which over 570 4A7C-derivatives were generated and characterized. Multiple compounds enhance Nurr1's transcriptional activity, leading to identification of an optimized, brain-penetrant agonist, 4A7C-301, that exhibits robust neuroprotective effects in vitro. In addition, 4A7C-301 protects midbrain dopamine neurons in the MPTP-induced male mouse model of PD and

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(54) **AMINOQUINOLINE DERIVATIVES AND USES THEREOF**

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