*Available online at* **www.joac.info**

ISSN: 2278-1862

*Journal of Applicable Chemistry*

2019, 8 (3): 1112-1122

(International Peer Reviewed Journal)

# Synthesis, Characterization, Electrochemical and Antioxidant Studies of Novel Quinoline Schiff Base Derivatives

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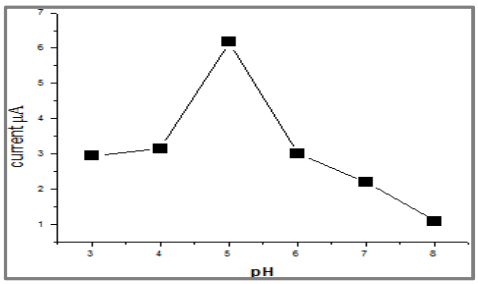
**Accepted on 16th April, 2019**



## ABSTRACT

*Free radicals particularly reactive oxygen species(ROS) and reactive nitrogen species (RNS) have a greater impact on humans both within the body and from the environment. The quinoline skeleton is present in numerous natural products, especially in alkaloids. Many quinolines display interesting pharmacological activities and found applications as pharmaceuticals, e.g., antimalarial drugs, such as quinine or chloroquin. The objective of the present study was to investigate the antioxidant activity of Schiff base ligand, electrochemical study and compared with at of the classical antioxidants, Vitamin C, for scavenging of 2,2-diphenyl-1-picrylhydrazyl (DPPH), and Hydroxyl radical (•OH) radical scavenging activities in vitro quinoline ring is commonly obtained by orthocondensation of benzene ring with pyridine A number of biological activities have been associated with quinoline-containing compounds. The present work reports the synthesis, spectral characterization and antioxidant and electrochemical studies of synthesized series of Schiff bases molecules. Molecules were screened for antioxidant analysis with DPPH scavenger methods. Present work indicates that the titled compounds were found to possess good antioxidant. Electrochemical behavior of 2-[(E)-{(2E)-[(2-chloroquinolin-3-yl) methylidene] hydrazinylidene} methyl] phenol of (analyte 4a to 4d) at $SnO_2$NPMGCE was studied and the redox potential for (analyte 4a -4c) was quite evident when compared to analyte (4d).This paper elucidates how electrochemically active compounds posses biologically significant activities that may further pave way for enhanced pharmaceutical and pharmacological applications.*

## Graphical Abstract




Plot of cathodic peak current vs pH 3.0-8.0 of 0.5 mM analyte (4a) at $SnO_2$ NPMGCE at scan rate 100 $mVs^{-1}$

**Keywords:** Cyclic voltammetry, Glassy carbon electrode, Antioxidant activity, Quinoline derivatives.