



SYNTHESIS OF ANTIPARKINSONIAN AND ANTIHYPERTENSIVE DRUG MOLECULE ANALOGUES MAY LEADS TO BETTER OPTIONS FOR MANKIND

Sheeba Rizvi^a, Sidra Akhter^b, Hina Siddiqui^b, Nasreen Fatima^a

^aDepartment of Chemistry, University of Karachi, Karachi-75270, Pakistan

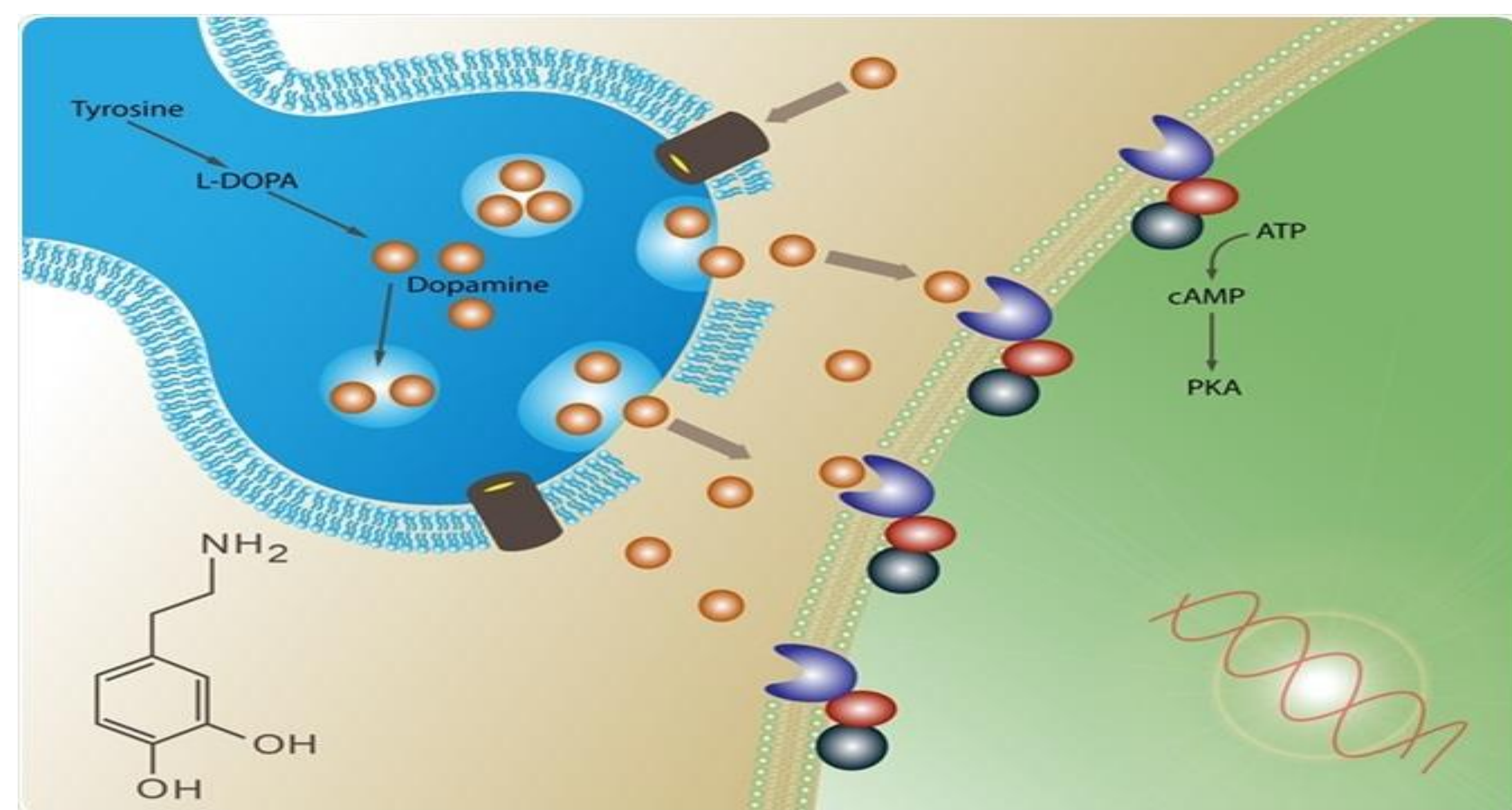
^bH.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, Pakistan

Outline

- Synthesis of new structural analogues of dopamine derivatives
- Structural characterization of synthesized compounds by spectroscopic techniques
- XRD analysis
- Biological activities

Introduction

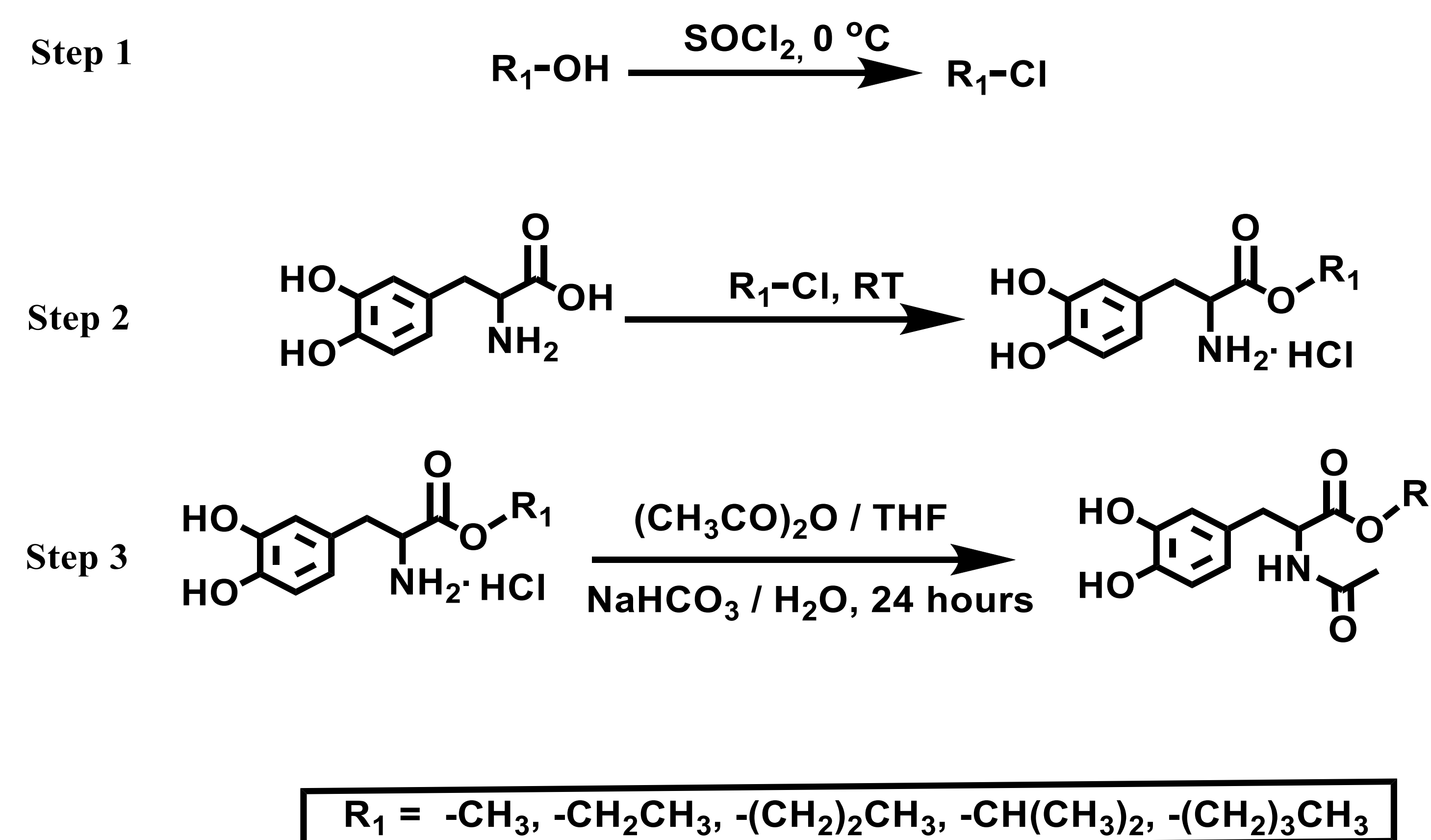
- Dopamine is a catecholaminetype neurotransmitters of the brain which is released by neurons to connect other nerve cells.
- Dopamine is responsible for number of neural functions including all stimuli responses.
- The brain contains numerous discrete projection of dopamine or dopamine pathways, one of which shows a main function in reward system that is motivational part of the brain.
- Its analogues including methyl dopa, levodopa and carbidopa are anti-parkinsons agents use in medical treatment



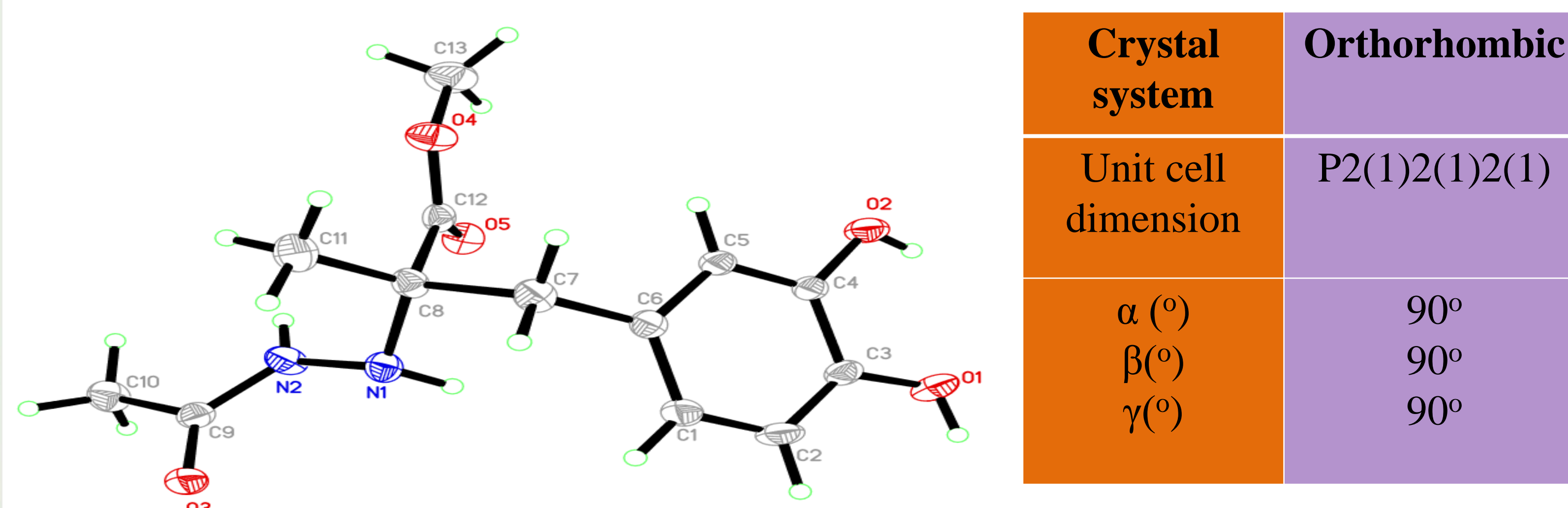
Objective

- ❖ To synthesize new derivatives of Dopamine analogues
- ❖ to determination of stuctures by spectroscopy and X-ray diffraction studies
- ❖ to evaluate the biological studies of synthesize new compounds

Scheme for Synthesis



Crystal structure



Results and Discussion

- ❑ The present research study indicates that new derivatives of dopamine analogues possesses
- ❑ promising anti-leishmanial, anti-glycation and anti-inflammatory activity
- ❑ Anti-parkinsons activities of these compinds is in procees
- ❑ This studies showed favourable output the in the field of drug repurposing which lead to these compounds as new drug candidate against inflammation, Leishmaniasis. And diabetes.

Results of Biological Activities

Comp.#	Structures	Anti-glycation activity	Anti-leishmanial activity	Anti-inflammatory activity
	Levodopa derivatives			
1		171.21±0.23	NA	NA
2		ND	206.7±3.6	NA
3		163.6±0.61	NA	NA
4		ND	NA	NA
5		ND	NA	NA
Carbidopa derivatives				
6		105.2±0.82	209.3±2.12	NA
7		20.44±1.73	NA	NA
8		ND	NA	29.1±1.9
9		34.63±0.16	NA	NA
10		40.9±0.74	NA	NA
Standard	ACARBOSE	875.75±2.08	-	-
	GALLIC ACID	-	26±3.15	-
	CYCLOHEXAMIDE	-	-	0.8±0.20