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INTRODUCTION

We had the great honor of of 2nd International Conference on Pioneer and Academic Research ICPAR 2025. It was truly a great pleasure for us to greet a lot of participants from many different countries attending ICPAR 2025! We firmly believe that the conference will become an important international event in the field of cross-industry discussion about innovations in Academic Studies.

Three cooperating organizations supported the two-day conference. There were 189 papers accepted for presentation at ICPAR 2025, contributed from different countries. We had plenary speeches and several well-known scientists and experts, to give invited talks at different sessions.

The purpose of ICPAR 2025 was to provide a forum for the participants to report and review innovative ideas, with up-to-date progress and developments, and discuss novel approaches to the application in the field of their own research areas and discuss challenges of doing science.

We sincerely hope that the exchange of ideas on doing research, science and improving education will help the participants, and international cooperation sharing the common interest will be enhanced.

On behalf the Organization Committee of ICPAR 2025, we would like to heartily thank our cooperating organizations for all they have done for the conference. We would also like to thank the authors for their contribution to the proceedings; the participants and friends of ICPAR 2025, for their interest and efforts in helping us to make the conference possible; and the Editorial boards for their effective work and valuable advice, especially the ICPAR 2025 secretariat and the ICPAR 2025 staff, for their tireless efforts and outstanding services in preparing the conference and publishing the Proceedings.

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Randic Co-indices of Graphs of some Drugs Used Against Monkeypox

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Abstract – With the increasing importance of computational methods in modern drug discovery, graph theory provides powerful tools for predicting physicochemical properties of chemical compounds. In this study, we focus on six drugs used in the treatment of monkeypox (Tecovirimat, Cidofovir, Brincidofovir, Valacyclovir, Famciclovir, and Acyclovir). By modeling their molecular structures as graphs, we calculated Randic coindex which is degree-based coindex using the CoM-polynomials. These findings provide numerical insights into the structural properties of antiviral drugs and may serve as a foundation for future QSPR/QSAR modeling, guiding the rational design of new compounds against monkeypox.

Keywords – Graph theory, Chemical graph theory, Topological index, Randic index, Monkeypox drugs

I. INTRODUCTION

The high cost and time-consuming nature of drug development have increased interest in approaches based on mathematical chemistry and graph theory. By representing chemical compounds as graphs, where atoms correspond to vertices and bonds to edges, various topological indices can be derived to predict physicochemical and biological properties. These indices serve as powerful tools in QSPR (Quantitative Structure–Property Relationship) and QSAR (Quantitative Structure–Activity Relationship) modeling ([1],[2]).

Among these indices, the Randić index, first introduced by Milan Randić [3], is one of the most widely studied descriptors. It captures structural regularities of molecular bonding and has been shown to correlate strongly with biological activity and drug efficacy. Later, extensions were developed to account for non-adjacent vertex pairs, resulting in what are known as Randić co-indices ([4],[5]). These co-indices provide additional structural insights and have recently been applied to investigate molecules used in cancer, COVID-19, and Alzheimer’s disease therapies ([6],[7]).

First reported in a monkey in 1958 and in humans in the Democratic Republic of Congo in 1970, this zoonotic disease has caused international outbreaks in 2022 and 2024, leading the World Health Organization (WHO) to declare it a global health emergency [8]. Although two vaccines have been approved by the FDA to prevent Mpox, antiviral therapies remain essential in disease management. In particular, drugs such as Tecovirimat, Cidofovir, Brincidofovir, Valacyclovir, Famciclovir, and Acyclovir are widely used, and ongoing clinical research continues to evaluate their effectiveness [9].

Çolakoğlu et al. calculated various indices depending on the vertex degree and neighboring vertex degree indices using M-polynomial and NM-polynomial models for the drugs Tecovirimat, Cidofovir, Brincidofovir, Valacyclovir, Famciclovir, and Acyclovir used in Monkeypox disease [10]. William and Bommahalli Jayaraman obtained QSPR models by calculating the Sombor index and its various versions by modeling the drugs Tecovirimat, Cidofovir, Valacyclovir, Famciclovir, and Acyclovir used in the treatment of Monkeypox disease with graphs [11]. Kalaimathi and Balamurugan obtained QSPR models by calculating the topological indices based on the density of the graphs of the drugs Cidofovir, Valacyclovir, Famciclovir, Acyclovir, Tecovirimat, and Brincidofovir [2]. Çolakoğlu et al. calculated

various coindexes using CoM-polynomial by modeling the drugs used in the treatment of monkeypox disease with graphs [12].

In this study, the present study focuses on the calculation of Randić co-indices for selected drugs used in the treatment of Mpox. By modeling their molecular structures through graph theory, numerical values of co-indices are obtained. The results are expected to enhance the topological characterization of these drugs and provide valuable insights for future drug design and repurposing strategies.

II. MATERIALS AND METHOD

Let G graph be $v \in V$ which is set of vertices and $e = uv \in E$ which is set of edges. In this paper, vertices are atoms of moleküls and edges are bonds in between atoms. Let $|V|$ denote the number of elements in the set of vertices and $|E|$ denote the number of elements in the set of edges. Let $\varpi_{ij} = |E_{i,j}|$ $|\{d(u) = i, d(v) = j\}$ and $\xi_i = |V_i| = |\{v \in V | d(v) = i\}|$.

Kirmanı and Ali defined Co-M-polynomial of a G graph [4] by

$$CoM(G, x, y) = \sum_{i \leq j} \bar{\varpi}_{ij} x^i y^j.$$

Kirmanı and Ali introduced [4] Randic co-index of G as

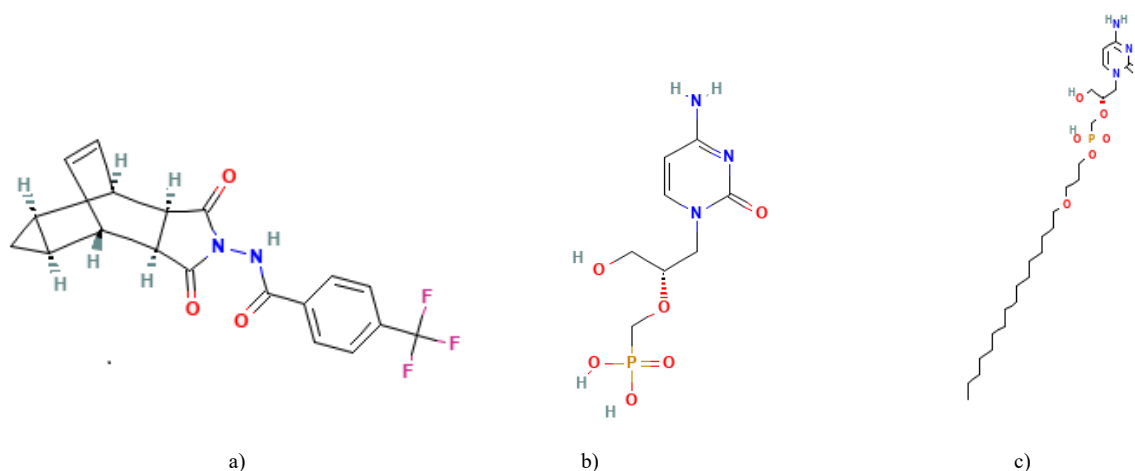
$$R_k(G) = \sum_{uv \in E} (d(u)d(v))^k.$$

With the help of Co-M polynomial, Randic index is defined [4] as

$$R_k(G) = d_x^k d_y^k (Co - M(G, x, y))(1, 1) \quad (1)$$

$$\text{Where } d_x = x \left(\frac{\partial (Co - M(G, x, y))}{\partial x} \right), d_y = y \left(\frac{\partial (Co - M(G, x, y))}{\partial y} \right).$$

Some drugs used in the treatment of monkeypox disease are Tecovirimat, Cidofovir, Brincidofovir, Valacyclovir, Famciclovir, Acyclovir. Figure 1 shows chemical structures of (a) Tecovirimat, (b) Cidofovir, (c) Brincidofovir, (d) Valacyclovir, (e) Famciclovir, and (f) Acyclovir, respectively. The figures of these chemical structures are taken from PubChem (an open chemistry database at the National Institutes of Health (NIH)).



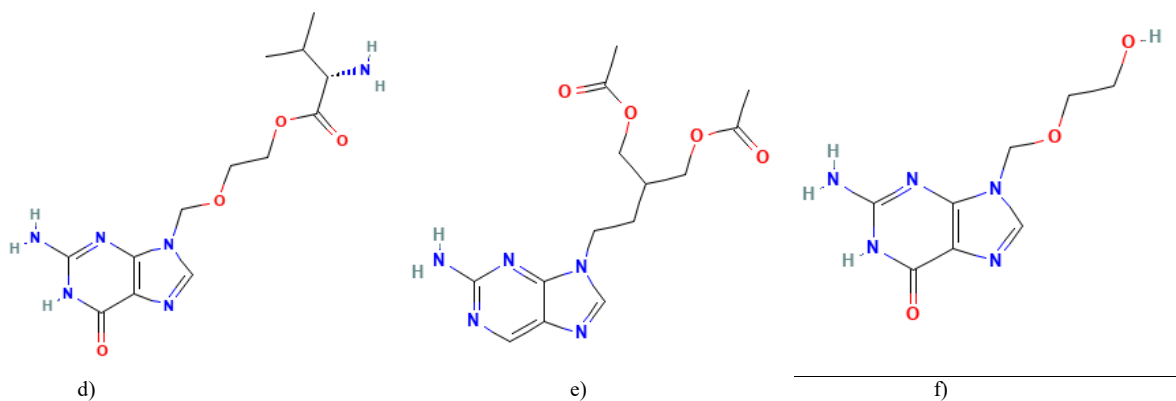


Fig. 1. Some drugs used in the treatment of monkeypox disease

Theorem 1.[12] Let T be the graph of Tecovirimat. Then,

$$Co - M(T, x, y) = 69xy^3 + 3xy^4 + 25x^2y^2 + 86x^2y^3 + 55x^3y^3 + 11x^3y^4$$

Theorem 2. [12] Let B be the graph of Brincidofovir. Then

$$Co - M(B, x, y) = 160xy^2 + 22xy^3 + 4xy^4 + 330x^2y^2 + 100x^2y^3 + 25x^2y^4 + 5x^3y^3$$

Theorem 3. [12] If V is the graph of Valacyclovir then

$$Co - M(V, x, y) = 42xy^3 + 31x^2y^2 + 64x^2y^3 + 23x^3y^3$$

Theorem 4. [12] If F is the graph of Famciclovir then

$$Co - M(F, x, y) = 30xy^3 + 50x^2y^2 + 65x^2y^3 + 19x^3y^3$$

Theorem 5. [12] If A is the graph of Acyclovir, then

$$Co - M(A, x, y) = 23xy^2 + 13xy^3 + 24x^2y^2 + 33x^2y^3 + x^3y^3$$

Theorem 6. [12] Let C be the graph of Cidofovir. Then,

$$Co - M(C, x, y) = 41xy^2 + 22xy^3 + 3xy^4 + 19x^2y^2 + 20x^2y^3 + 6x^2y^4 + 5x^3y^3.$$

III. MAIN RESULTS

In this section, Randic co-indexes of graph models of drugs used in the treatment of monkeypox are Tecovirimat, Cidofovir, Brincidofovir, Valacyclovir, Famciclovir, Acyclovir.

Theorem 3.1. If T is the graph of Tecovirimat then

$$R_k(T) = 3^k 69 + 4^k 3 + 2^{2k} 25 + 2^k 3^k 86 + 3^{2k} 55 + 3^k 4^k 11$$

Proof. With Theorem 1 and Equation (1), the following is written

$$\begin{aligned} d_x^k d_y^k (Co - M(T, x, y)) &= d_x^k d_y^k (69xy^3 + 3xy^4 + 25x^2y^2 + 86x^2y^3 + 55x^3y^3 + 11x^3y^4) \\ &= 3^k 69xy^3 + 4^k 3xy^4 + 2^k 2^k 25x^2y^2 + 2^k 3^k 86x^2y^3 + 3^k 3^k 55x^3y^3 + 3^k 4^k 11x^3y^4 \end{aligned}$$

and

$$R_k(T) = (3^k 69xy^3 + 4^k 3xy^4 + 2^k 2^k 25x^2y^2 + 2^k 3^k 86x^2y^3 + 3^k 3^k 55x^3y^3 + 3^k 4^k 11x^3y^4)(1,1)$$

$$R_k(T) = 3^k 69 + 4^k 3 + 2^k 2^k 25 + 2^k 3^k 86 + 3^k 3^k 55 + 3^k 4^k 11.$$

Theorem 3.2. If B is the graph of Birincidofovir, then

$$R_k(B) = 2^k 160 + 3^k 22 + 2^{2k} 334 + 2^k 3^k 100 + 2^{3k} 25 + 3^{2k} 5.$$

Proof. Using Theorem 2 and Equation (1), we have

$$\begin{aligned} R_k(B) &= d_x^k d_y^k (Co - M(B, x, y))(1,1) \\ &= (2^k 160xy^2 + 3^k 22xy^3 + 4^k 4xy^4 + 2^k 2^k 330x^2y^2 + 2^k 3^k 100x^2y^3 + 2^k 4^k 25x^2y^4 \\ &\quad + 3^k 3^k 5x^3y^3)(1,1) \end{aligned}$$

or

$$R_k(B) = 2^k 160 + 3^k 22 + 4^k 4 + 2^k 2^k 330 + 2^k 3^k 100 + 2^k 4^k 25 + 3^k 3^k 5.$$

Theorem 3.3. If V is the graph of Valacyclovir then

$$R_k(V) = 3^k 42 + 2^{2k} 31 + 2^k 3^k 64 + 3^{2k} 23$$

Proof. From Theorem 3 and Eq. (1),

$$R_k(V) = d_x^k d_y^k (42xy^3 + 31x^2y^2 + 64x^2y^3 + 23x^3y^3)(1,1)$$

or

$$R_k(V) = (3^k 42xy^3 + 2^k 2^k 31x^2y^2 + 2^k 3^k 64x^2y^3 + 3^k 3^k 23x^3y^3)(1,1)$$

or

$$R_k(V) = 3^k 42 + 2^k 2^k 31 + 2^k 3^k 64 + 3^k 3^k 23.$$

Theorem 3.4. If F is the graph of Famciclovir then

$$R_k(F) = 3^k 30 + 2^{2k} 50 + 2^k 3^k 65 + 3^{2k} 19$$

Proof. From Theorem 4 and Eq.(1), we have

$$R_k(F) = d_x^k d_y^k (30xy^3 + 50x^2y^2 + 65x^2y^3 + 19x^3y^3)(1,1)$$

or

$$R_k(F) = (3^k 30xy^3 + 2^k 2^k 50x^2y^2 + 2^k 3^k 65x^2y^3 + 3^k 3^k 19x^3y^3)(1,1),$$

or

$$R_k(F) = 3^k 30 + 2^k 2^k 50 + 2^k 3^k 65 + 3^k 3^k 19.$$

Theorem 3.5. If A is the graph of Acyclovir, then

$$R_k(A) = 2^k 23 + 3^k 13 + 2^{2k} 24 + 2^k 3^k 33 + 3^{2k}.$$

Proof. Using Theorem 5 and Eq. (1), it is obtained

$$R_k(A) = d_x^k d_y^k (23xy^2 + 13xy^3 + 24x^2y^2 + 33x^2y^3 + x^3y^3)(1,1)$$

or

$$R_k(A) = 2^k 23 + 3^k 13 + 2^k 2^k 24 + 2^k 3^k 33 + 3^k 3^k.$$

Theorem 3.6. If C is the graph of Cidofovir, then

$$R_k(C) = 2^k 41 + 3^k 22 + 2^{2k} 22 + 2^k 3^k 20 + 2^{3k} 6 + 3^{2k} 5$$

Proof. From Theorem 6 and Eq. (1), the following results is obtained

$$R_k(C) = d_x^k d_y^k (41xy^2 + 22xy^3 + 3xy^4 + 19x^2y^2 + 20x^2y^3 + 6x^2y^4 + 5x^3y^3)(1,1)$$

or

$$R_k(C) = 2^k 41 + 3^k 22 + 4^k 3 + 2^k 2^k 19 + 2^k 3^k 20 + 2^k 4^k 6 + 3^k 3^k 5.$$

IV. CONCLUSION

The importance of computer-aided studies in drug discovery is increasing daily. Topological indices are numerical values obtained from graphs by modeling chemical structures using graphs.

In this study, the Randic co-index of the graph models of Tecovirimat, Cidofovir, Brincidofovir, Valacyclovir, Famciclovir, Acyclovir drugs used in monkeypox was calculated using the Co-M polynomial. The results will be used in QSPR studies to predict the physicochemical properties of drugs for the discovery of new drugs for the treatment of monkeypox, thus informing fields such as pharmacology and mathematical chemistry.

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REFERENCES

- [1] Gutman, I. (1990). A property of the simple topological index. *MATCH Communications in Mathematical and in Computer Chemistry*, 25, 131-140.
- [2] Kalaimathi, M. & Balamurugan, B.J. (2023). Topological indices of molecular graphs of monkeypox drugs for QSPR analysis. *International Journal of Quantum Chemistry*, 123(22), e27210
- [3] Randić, M. (1975). Characterization of molecular branching. *Journal of American Chemistry Society*, 97(23), 6609–6615
- [4] Kirmani, S.A.K. & Ali, P. (2022). CoM-polynomial and topological coindices of hyaluronic acid conjugates. *Arabian Journal of Chemistry*, 15(7), 103911.
- [5] Zaman, S., Rasheed, S., & Alamer, A. (2024). A quadratic regression model to quantify certain latest corona treatment drug molecules based on coindices of M-polynomial. *The Journal of Supercomputing*, 80(19), 26805-26830.
- [6] Öztürk Sözen, E., Eryaşar, E., & Çakmak, Ş. (2024). Szeged-like topological descriptors and COM-polynomials for graphs of some Alzheimer's agents. *Molecular Physics*, 122(14), e2305853.
- [7] Özkan, Y. S., & Kara, Y. (2024). Topological coindices and QSPR analysis for some potential drugs used in lung cancer treatment via CoM and CoNM-polynomials. *Physica Scripta*, 99(10), 105058.
- [8] World Health Organization (WHO). Mpox Fact Sheet. Accessed: May 2025.
- [9] Shamim, M. A., Satapathy, P., Padhi, B. K., Veeramachaneni, S. D., Akhtar, N., Pradhan, A., ... & Rodriguez-Morales, A. J. (2023). Pharmacological treatment and vaccines in monkeypox virus: a narrative review and bibliometric analysis. *Frontiers in pharmacology*, 14, 1149909.
- [10] Çolakoglu, Ö., Kamran, M., & Bonyah, E. (2022). M-Polynomial and NM-Polynomial of Used Drugs against Monkeypox. *Journal of Mathematics*, 2022(1), 9971255.
- [11] William, T., & Bommahalli Jayaraman, B. (2024, February). QSPR Analysis for ADMET Properties of Antiviral Drugs for Monkeypox Disease through Sombor Topological Descriptors. In *International Conference on Theoretical and Applied Computing* (pp. 69-84). Singapore: Springer Nature Singapore.
- [12] Çolakoglu, Ö., Yildirim, S., Acibas, E., & Yulek, E. (2025). CoM-polynomials and coindices of some drugs used against Monkeypox disease. *Journal of Discrete Mathematics and Its Applications*, 10(3), 223-242.

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Of

PARTICIPATION

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PAPER TITLE

*Randic Co-indices of Graphs of some Drugs Used Against
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PRESENTATION TYPE

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