Reduced Reverse Degree-Based Topological Indices and QSPR Analysis of Drugs Used for Breast Cancer Treatment

Surendrakumari J[1] and Velmurugan N[2]

[1]Research Scholar, PG and Research Department of Mathematics
[1]Theivanai Ammal College for Women(Autonomous), Villupuram.
[1]email: surendhirakumari@gmail.com
[2]Associate Professor, PG and Research Department of Mathematics
[2]Theivanai Ammal College for Women(Autonomous), Villupuram.
[2]email: velnatarajan07@gmail.com

Abstract: Topological indices are powerful tools for characterizing molecular structures through graph-theoretical approaches. This study investigates reduced reverse degree-based topological indices of drugs used in breast cancer treatment by modeling their chemical structures as graphs. Selected indices are computed and analyzed using Quantitative Structure–Property Relationship (QSPR) techniques.The results reveal a strong correlation between these indices and key physicochemical properties of the compounds, demonstrating their effectiveness as predictive descriptors. This work emphasizes the significance of reduced reverse degree-based indices in medicinal chemistry and their potential application in drug design and property prediction.

Keywords: Topological Indices, Reduced Reverse Degree, QSPR, Molecular Graphs, Breast Cancer Drugs