

Nurgul K. Bakirhan¹

Elif Esra Firat², Esen Bellur Atici³, Sibel A. Ozkan²

¹University of Health Sciences, Gulhane Faculty of Pharmacy, Department of Analytical Chemistry, Ankara, Turkey

²Ankara Univeristy, Pharmacy Faculty, Department of Analytical Chemistry, Ankara, Turkey

³DEVA Holding A.S. R&D Center, Tekirdag, Turkey

nurgulk44@gmail.com

Abstract (Calibri 12)

Roxadustat (Figure 1) is an orally used antianemia drug for the treatment of renal anemia. Renal anemia is caused by a deficiency of erythropoietin, a protein that helps formation of red blood cells. Roxadustat increases the stability of HIF in the kidney by inhibiting the enzyme prolyl-hydroxylase, which activates hypoxia (lack of oxygen) inducible factor (HIF). Thus, it undertakes the treatment of anemia by causing an increase in erythropoietin production [1, 2]. Chromatographic and spectroscopic studies of roxadustat are available in the literature, but electrochemical studies have not been found yet. Electrochemical methods can be preferred because of their advantages over other methods such as low cost, low solution consumption and shorter analysis times. In this study, the electrochemical behavior of the roxadustat drug in aqueous media was investigated in various buffer solutions. The oxidation mechanism has been tried to be clarified by pH and velocity scanning studies. After the optimization of the method, calibration studies were carried out in the determined pH 5.3 acetate buffer solution and validation parameters were examined.

References

- [1] Provenzano R, Besarab A, Sun CH, Diamond SA, Durham JH, Cangiano JL. Clinical Journal of the American Society of Nephrology, 11 (6) (2016) 982.
- [2] Becker K, Saad M, Advances in Theraphy, 34 (4) (2017) 848.

Figures

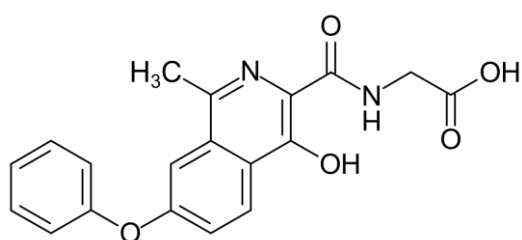


Figure 1: Chemical structure of roxadustat