NEW SPECTROPHOTOMETRIC REDUCTION – OXIDATION SYSTEM FOR METHYLDOPA DETERMINATION IN DIFFERENT PHARMACEUTICAL MODELS

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References:

1. Manz, A., Graber, N., & Widmer, H. Á. (1990). Miniaturized total chemical analysis systems: a novel concept for chemical sensing. *Sensors and actuators B: Chemical*, **1**(1-6), 244-248.
2. Manz, A., Harrison, D. J., Rettinger, J. C., Verpoorte, E., Ludi, H., & Widmer, H. M. (1991). Transducers 91, *Digest of Technical Papers. IEEE*, **91**, 939-941.
3. Harrison, D. J., Manz, A., & Glavina, P. J. (1991). Transducers **91**, *Digest of Technical Papers.* IEEE 91CH2817-5, New York ISBN 0-87942-586-5, 792-795.
4. Bruin, G. J. (2000). Recent developments in electrokinetically driven analysis on microfabricated devices. ELECTROPHORESIS: *An International Journal*, **21**(18), 3931-3951.
5. de Mello, A. (2002). FOCUS On-chip chromatography: the last twenty years. Lab on a Chip, **2**(3), 48N-54N.
6. Lacher, N. A., Garrison, K. E., Martin, R. S., & Lunte, S. M. (2001). Microchip capillary electrophoresis/ electrochemistry. *Electrophoresis*, **22**(12), 2526-2536.
7. Harrison, D. J., Manz, A., Fan, Z., Luedi, H., & Widmer, H. M. (1992). Capillary electrophoresis and sample injection systems integrated on a planar glass chip. *Analytical chemistry*, **64**(17), 1926-1932.
8. Woolley, A. T., & Mathies, R. A. (1995). Ultra-high-speed DNA sequencing using capillary electrophoresis chips. *Analytical chemistry*, **67**(20), 3676-3680.
9. Burns, M. A., Johnson, B. N., Brahmasandra, S. N., Handique, K., Webster, J. R., Krishnan, M., & Burke, D. T. (1998). *An integrated nanoliter DNA analysis device. Science*, **282**(5388), 484-487.
10. Wilke, R., & Büttgenbach, S. (2003). A micromachined capillary electrophoresis chip with fully integrated electrodes for separation and electrochemical detection. *Biosensors and Bioelectronics*, **19**(3), 149-153.
11. Dolník, V., Liu, S., & Jovanovich, S. (2000). Capillary electrophoresis on microchip. ELECTROPHORESIS: *An International Journal*, **21**(1), 41-54.
12. Hughes, M. P. (2002). Strategies for dielectrophoretic separation in laboratory-on-a-chip systems. *Electrophoresis*, **23**(16), 2569-2582.
13. Fouladgara M. and Ahmadzadeh S. (2016). *Appl Surf Sci*. **379,** 150-5.
14. S. Emara, T. Masujima, W. Zarad, M. Kamal, M. Fouad, R. El-Bagary, *et al.,* J Chromatogr Sci. **53**(2015), 1353-1360.
15. B. Pérez-Mella, A. Álvarez-Lueje, Electroanalysis. **25**(2013), 2193-2199.
16. B.K. Kim, and R.T. Koda. J. Pharm. Sci, **66**(1977), 1632-1634.
17. K.J. Ali, and N.M. Muslim, J. Glob. Pharma Technol, **11**(2019), 284-294.
18. K.J. ALI, and N.A.R. HAMEED, Acta Chim. Pharm. Indica, **4**(2014), 157-169.
19. K.J. Ali, and Abd M. AL-Munieer, HIV Nursing, **23**(2023), 1135-1140.
20. K. Sharma S.P. Sharma, S.C. Lahiri, Spectrochemical Acta Part A: Molecular and Biomolecular Spectroscopy. **92**(2012), 212-224
21. I. M. Rahman, Y. Furusho, Z. A. Begum, R. Sato, H. Okumura, H. Honda, H. Hasegawa, Cent. Eur. J. Chem. **11**(2013), 672–678.
22. S. Emara, T. Masujima, W. Zarad, M. Kamal, M. Fouad, R. El-Bagary. J Liq Chromatogr Relat Technol. **38**(2015), 153-62.
23. L. Vlase, D. Mihu, D.S. Popa, A. Popa, C Briciu, F. Loghin, et al. Studia UBB Chem; **1**(2013), 31-41.
24. S. Shahrokhiana, S. Rastgara. Electrochim Acta, **58**(2011), 125-33.
25. H. Karimi-Maleh, M.A. Khalilzadeh, Z. Ranjbarha, H. Beitollahi, A.A. Ensafid, D. Zareyeeb.. Anal Methods, **4**(2012), 2088-94.
26. E. Molaakbari, A. Mostafavi, H. Beitollahi. Mater Sci Eng C Mater Biol Appl, **36**(2014), 168-72.
27. C. Ramirez, M.A. Del Valle, M. Isaacs, F. Armijo. Electrochim Acta, **199**(2016), 227-33.
28. M.J. Chaichi, T. Khajvand, J. Mehrzad, S. Asghari, M. Qandalee. Anal Sci, **29**(2013), 815-21.
29. F. Ghasemi, M.R. Hormozi-Nezhad, M. Mahmoudi. Anal Chim Acta; **917**(2016), 85-92.
30. M.T. Vardini, L. Mardani. J Braz Chem Soc 2018; 29:310-9.
31. S. Kamino, S. Mitani, M. Asano, T. Yamaguchi, Y. Fujita, M. Hoshino. Talanta; **85**(2011), 2339-43.
32. M.Hoshino, S. Kamino, S. Mitani, M. Asano, T. Yamaguchi, Y. Fujita Anal Sci, **25**(2009), 125-8.
33. A.Z. Ramadan, H. Mandil, R. Alsayed-Ali. Int J Pharm Pharm Sci, **7**(2015), 191-198.
34. H. Rahman. Int J Pharm Pharm Sci, **9**(2017), 1-9.
35. M.A. Rauf, M. Ikram, M. Ahmad. Dyes Pigm; **52**(2002), 183-9.
36. G.W. Belsare, A.B. Zade, P.P. Kalbende, P.U. Belsare.Pharm Chem, **4**(2012), 1226-1238.

37. Salem, F.B., 1993. Spectrophotometric determination of catecholamines. Analytical Letters, 26(2), pp.281-294.
38. Rouessac, Francis; ROUESSAC, Annick, Modern Instrumentation Methods and Techniques. Chichester, England, 2007.
39. Ribeiro, P. R. S., Neto, J. G., Pezza, L., & Pezza, H. R. (2005). Flow-injection spectrophotometric determination of methyldopa in pharmaceutical formulations. Talanta, **67**(1), 240-244.
40. Fathi, S. A., Othman, N. S., & AL-Taee, A. T. (2023). Indirect Spectrophotometric Method for Determination of Methyldopa in Pure and Pharmaceutical Formulation. Biomedicine and Chemical Sciences, **2**(2), 149-154.