

1.810 and 0.649 - 1.503 and is well within the acceptance criteria of less than 2% at all the wavelength. The low value of % RSD indicates that the proposed method was precise and accurate [Figure 14 & 15, Table 5, 6].

Recovery

The percentage recovery of the drug from the synthetic mixture was found to be in the range of 98.74 - 100.26 % w/w, which was within the acceptance limit of 97 - 103 % w/w as per the ICH guideline as shown in Table 7 and Figure 16.

CONCLUSION

The suggested UV spectrophotometric method employing multivariate calibration technique was novel, uncomplicated, accurate, precise, profitable and sensitive for the quantification of Zaleplon in its pharmaceutical formulations. Hence, this method is very useful with very simple mathematical contents, is more reliable than the other spectrophotometric methods and strongly recommends the developed method for a routine analysis of Zaleplon in pharmaceutical formulations.

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REFERENCES

- The Merck Index, 14th Edn, USA: Merck and CO., Inc., 2006.
- Roger WQalker, Cate Whittlesea, Clinical Pharmacy and Therapeutics, 4th Edn, Churchill Livingstone, New York, 2007, 193
- Rashmith N, Sharma HK, Mukkanti K (2012) Development of stability indicating HPLC method for the determination of impurities in zaleplon. *J Research Pharm Biomed Sci* 3: 1424-1431.
- Kratzsch C, Tenberken O, Peters FT, Weber AA, Kramer T, et al. (2004) Screening, library-assisted identification and validated quantification of 23 benzodiazepines, flumazenil, zaleplon, zolpidem and zopiclone in plasma by liquid chromatography/mass spectrometry with atmospheric pressure chemical ionization. *J Mass Spectrom* 39: 856-372.
- Feng F, Jiang J, Dai H, Wu J (2003) Development and validation of a high-performance liquid chromatography-electrospray ionization-mass spectrometry assay for the determination of zaleplon in human plasma. *J Chromatogr Sci* 41: 17-21.
- Zhang B, Zhang Z, Tian Y, Xu F, Chen Y (2006) High-performance liquid chromatography-atmospheric pressure chemical ionisation-mass spectrometry determination of zaleplon in human plasma. *J Pharm Biomed Anal* 40: 707-714.
- Ming D, Sufen Z, Jianfang L, Huichen L (2004) Determination of Zaleplon in Human Plasma by RP - HPLC with Fluorescence Detection. *Yaowu Fenxi Zazhi* 24: 611-613.
- Foda NH, Elbary AA, El-Gasazyerly O (2006) Reversed-phase liquid chromatographic determination of zaleplon in human plasma and its pharmacokinetic application. *J Anal Lett* 39: 1891-1905.
- Guocheng L, Junyan W, Rifang L (2003) Determination of zaleplon in blood plasma by RP-HPLC with fluorescence detection. *Academic Journal of Guangdong collage of pharmacy* 19: 322-324.
- Villain M, Concheiro M, Cirimele V, Kintz P (2005) Screening method for benzodiazepines and hypnotics in hair at pg/mg level by liquid chromatography-mass spectrometry/mass spectrometry. *J Chromatogr B Analyt Technol Biomed Life Sci* 825: 72-78.
- Guannar T, Ariniemi K, Lillsunde P (2006) Fast gas chromatography-negative-ion chemical ionization mass spectrometry with microscale volume sample preparation for the determination of benzodiazepines and alpha-hydroxy metabolites, zaleplon and zopiclone in whole blood. *J Mass Spectrom* 41: 741-754.
- Giroud C, Augsburger M, Menetrey A, Mangin P (2003) Determination of zaleplon and zolpidem by liquid chromatography-turbo-ionspray mass spectrometry: application to forensic cases. *J Chromatogr B Analyt Technol Biomed Life Sci* 789: 131-138.
- Horstkötter C, Schepmann D, Blaschke G (2003) Separation and identification of zaleplon metabolites in human urine using capillary electrophoresis with laser-induced fluorescence detection and liquid chromatography-mass spectrometry. *J Chromatogr A* 1014: 71-81.
- Larnas G, Bollo S, Rodriguez M, Lemus I, Nuñez-Vergara LJ, et al. (2005) Voltammetric behavior of zaleplon and its differential pulse polarographic determination in capsules. *J AOAC Int* 88: 1135-1141.
- Rao TN, Srineevasula REG, Patrudu TB, Parvathamma T (2012) Estimation of zaleplon by a new RP-HPLC method. *J Chem Pharm Research* 4: 3010-3014.
- Tang B, Wang X, Jia BX, Niu YJ, Wei Y, et al. (2003) Simple, rapid, and sensitive spectrofluorimetric determination of zaleplon in micellar medium. *Anal Lett* 36: 2985-2997.
- Metwally FH, Abdelkawy M, Abdelwahab NS (2007) Application of spectrophotometric, densitometric, and HPLC techniques as stability indicating methods for determination of zaleplon in pharmaceutical preparations. *J Spectrochem Acta* 68: 1220-1230.
- Arayne M.S., Najma Sultana., Zuberi M.H., Siddiqui F.A., Spectrophotometric quantification of metformin in bulk drug and pharmaceutical formulations using Multivariate technique, *Indian J. Pharm. Sci*, 2009, 71(3), 331-335.
- Q2R1 ICH guidelines for analytical method development. Available at: http://www.ich.org/fileadmin/Public_Web_Site/ICH_Products/Guidelines/Quality/Q2_R1/Step4/Q2_R1_Guideline.pdf.