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Nitrogen, Oxygen, Phosphorus and Sulphur Heterocyclic Anti–Cancer Nano Drugs Separation in the Supercritical Fluid of Ozone (O_3) Using Soave–Redlich–Kwong (SRK) and Pang–Robinson (PR) Equations

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Editorial

Anti–cancer Nano drugs separation is investigated as one of the most important steps of a process. An important technique of anti–cancer Nano drugs separation is by means of supercritical fluids. Fluids such as Ozone (O_3) show an increase in their solubility when they enter the zone of supercritical condition. The application of supercritical fluids is preferred in the separation of anti–cancer Nano drugs whose sensitivity to temperature and pressure are high–Nano materials such as drugs, foods, proteins and so on. The molecular shape of these Nano compounds would be transformed when these parameters change. In the current editorial, firstly, a new third equation of state has been presented with the combination of Soave's defending statement and Redlich–Kwong's attracting statement, then and according to the six well–defined scales, the solubility of anti–cancer Nano drugs in the supercritical fluid of Ozone (O_3) has been studied with the aid of new equations and also its results have been compared with the results of Soave–Redlich–Kwong (SRK) and Pang–Robinson (PR) equations. In addition, the error of solubility for 196 experimental points in the new equation of state, Soave–Redlich–Kwong (SRK) and Pang–Robinson (PR) equations are 7.352%, 11.728% and 9.294%, respectively. It indicates that the new equation possesses an acceptable and reasonable accuracy and precision in the prediction of solubility.

Furthermore, to do this editorial, the Nitrogen, Oxygen, Phosphorus and Sulphur heterocyclic anti–cancer Nano drugs were chosen and classified into four isolated groups and then the experimental spectra of the Hydrogen and Carbon nucleus were prepared [1–20]. Since the main goal of this editorial is developing a relationship between theoretical and experimental chemical shifts of Carbon and Hydrogen nucleus in N–, O–, P– and S– heterocyclic anti–cancer Nano drugs, the theoretical and experimental data were compared and analyzed together [21–31]. Finally, after studying the four groups, a formula was obtained for each group to join experimental to theoretical variables together. For testing the reliability of these formulas several molecules were chosen and the experimental spectra were gathered using ^{1}HNMR, ^{13}CNMR, ^{31}PNMR, Attenuated Total Reflectance Fourier Transform Infrared (ATR–FTIR), FT–Raman, HR Mass and UV–Vis spectroscopies and then the formula was applied and the percentage of error was taken into the account.

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