Gavazov K., Türkyilmaz M., Altun Ö., *Extractive-spectrophotometric investigations on ternary ion-associated complexes between the vanadium(V) – 4-(2-pyridylazo)-resorcinol anionic chelate and some methoxybis(tetrazolium) cations.* ***Bulg. Chem. Commun.*** **40**(1) (2008) 65-69.

The formation and liquid-liquid extraction of ion-associated complexes between the vanadium(V) – 4-(2-pyridylazo)-resorcinol (PAR) anionic chelate and the cations of some metoxybis(tetrazolium) salts (MT^{2+}), which contain different number of nitro groups {3,3'-(3,3'-dimetoxy-4,4'-biphenylene)bis[2,5-di(4-nitrophenyl)-2Htetrazolium] chloride (Tetranitrotetrazolium Blue chloride, TNBT), 3,3'-(3,3'-dimetoxy-4,4'-biphenylene)bis[2-(4-nitrophenyl)-5-phenyl-2H-tetrazolium] chloride (Nitro Blue Tetrazolium chloride, NBT) and 3,3'-(3,3'-dimetoxy-4,4'-biphenylene)-bis(2,5-diphenyl-2H-tetrazolium) chloride (Tetrazolium Blue chloride, BTC)} have been studied. The optimum conditions for extraction in chloroform (pH, concentration of the reagents, extraction time) and the composition of the complexes (V:PAR:MT=2:4:3) have been found. The equilibrium constants (the constants of extraction – K_{Ex}, the constants of distribution – K_D, the constants of formation – β), and the recovery factors have been determined. The results show that a linear relationship exists between $LogK_{Ex}$ and the number of nitro groups included in MT^{2+} (N_{NO2}): the higher N_{NO2}, the lower $LogK_{Ex}$. A similar relationship has been established between Logβ and N_{NO2}. These relationships have been used to predict the values of $LogK_{Ex}$ and Logβ for new (uninvestigated) methoxybis(tetrazolium) ion-associated complexes.

Key words*: Tetrazolium salt, ion-association, 4-(2-pyridylazo)-resorcinol, extraction, vanadium, nitro group.*