

Variation Profile of Low-Density Lipoproteins Cholesterol (LDLC) in Sever Psoriatic Patients

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Abstract

The measurement of the low-density lipoproteins cholesterol from the blood samples of normal and psoriatic patients males and females proceeded by adding polyvinyl sulphate to the sample which precipitates low density lipoproteins cholesterol. The concentration of low-density lipoproteins cholesterol (LDLC) was calculated from the difference between the serum total cholesterol and the cholesterol in the supernatant after centrifugation.

Key words: Low density lipoproteins, Sever psoriasis, Blood samples

Thermodynamic Studies on Adsorption of Methanol Vapours on Metal-Exchanged Zeolite-A

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Abstract

Adsorption of methanol vapors on zeolite-4A and metals (Co, Ni, and Cu) exchanged zeolite-A has been studied as a function of temperature. Thermodynamic parameters such as ΔG° , ΔH , and ΔS° are calculated. It is observed that in most of the cases, metal exchanged zeolite samples have more adsorption affinity towards methanol as compared to parent zeolite. From adsorption data isosteric heat of adsorption were also calculated as a function of coverage and temperature, which is similar to $-\Delta H$.

Key words: Thermodynamics, Adsorption, Isotherms, Metal Exchanged Zeolite-A

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Volatile Organic Compounds (VOCs) and Polycyclic Aromatic Hydrocarbons (PAHs) in the Water-Soluble Fraction (WSF) of Kerosene and Aviation Fuel in Seawater

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Abstract

Detailed compositions of the water-soluble fraction (WSF) of kerosene and of aviation turbine kerosene (aviation fuel) were investigated. WSF was prepared by stirring kerosene and aviation fuel for 24 hrs with seawater. Three different temperatures (15°, 25° and 35°C) were used during the preparation. Volatile organic compounds in the WSFs were analyzed by purge & trap/GC and PAHs were determined in the concentrated extract by GC/MS in single ion monitoring mode. The results showed that WSF of kerosene contained 30 volatile organic compounds the total of which amounted to about 7 mg/l. Aromatics and naphthenes were the dominant groups. The concentration of VOCs in the WSF of aviation fuel was slightly less than kerosene (about 5 mg/l) but contained more compounds (39 compounds). VOCs consisted, almost entirely, of aromatic compounds. There were, however, significant differences, in the distribution and quantity of PAHs in the WSFs. The levels were relatively low (0.132 mg/l) in the WSF of kerosene. The WSF of aviation fuel, on the contrary, contained relatively large amounts of PAHs (about 4 mg/l). Naphthalene and its methylated homologs were the dominant PAHs in the WSF of both refined products.

Keywords: Aviation fuel; kerosene; polycyclic aromatic hydrocarbons; volatile compounds; water-soluble fraction.

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Potentiometric Determination of Potassium Using an Indigenously Fabricated Coated Wire Ion Selective Electrode

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Abstract

A potentiometric sensor system based on coated wire has been developed indigenously for selectivity towards potassium ion. The electrode has been prepared by coating a silver wire conductor with PVC based film. The preferred system with an antibiotic *Valinomycin* in membrane shows a linear response towards potassium ions over a concentration range of 1×10^{-1} M to 1×10^{-5} M of KCl solution. A saturated calomel electrode was used as a reference electrode with LiCl_3Ac as an internal filling solution. To avoid interferences, KCl was not used. The electrode was also tried for the determination of potassium ion in KCl tablets NEO-K, supplied by *Zaffa*, Pvt. Ltd. Pakistan. Reported value of potassium in tablets was 260mg/tablet and result found with coated wire electrode was 265 mg / tablet.

Key words: *Ion selective electrode, potassium, valinomycin.*

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Application of *p*-Benzoquinone to Spectrophotometric Determination of Secnidazole

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Abstract

A simple, accurate and low cost spectrophotometric method for the determination of secnidazole in raw and pharmaceutical dosage forms has been developed. The proposed method is based on the reduction of the nitro group of the drug to amino group in the presence of Zinc dust and HCl. This reduced product then reacts immediately with *p*-benzoquinone and develops color, which has maximum absorbance at 532 nm. The calibration graph is linear over the concentration range of $12.5\text{-}160 \mu\text{gml}^{-1}$ with molar absorption coefficient of $1.5 \times 10^3 \text{ Lmole}^{-1}\text{cm}^{-1}$. The common excipients and additives do not interfere in the determination. The proposed method is applied successfully to commercially available tablets and results are statistically compared with those obtained by reference method.

Key words: Secnidazole, *p*-Benzoquinone, pharmaceutical analysis, spectrophotometry

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Natural and Fallout Activity in Mango Trees

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Abstract

In the recent years radiological studies are concentrated on the investigation of restoration possibilities of contaminated ecosystems and to develop methods for decreasing the bioavailability of the radionuclides released to the environment. In the present study the uptake of ^{40}K , ^{137}Cs , ^{226}Ra and ^{232}Th in the mango leaves of different towns of Bahawalpur, Bahawalnagar and Rahimyar Khan Districts were measured. The mean activity levels of ^{40}K , ^{137}Cs , and ^{232}Th in mango leaves present in the area under study are 279.63, 0.69, 4.19 Bq kg⁻¹. The activities were found to be within the limits recommended by various agencies. The radium equivalent activity, external and internal hazard indices and absorbed dose rates were also measured to assess the health risks. The mean values of radium equivalent activity, hazard indices, and absorbed dose rates are 27.52 Bq kg⁻¹, 0.07 and 14.73 nGyh⁻¹ respectively.