

Dedication

To my parents

To my sisters and brothers

To my friends

Acknowledgment

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Abstract

Iron compound drugs (ferrous sulphate tablets, ferrous gluconate tablets and ferric hydroxide poly maltose syrup) have been chosen to follow up the changes in concentration of iron during storage in different conditions (0°C , Sun light, 60°C), for certain periods. The study was carried out by titration with cerium sulphate, atomic absorption and infra red spectroscopy methods.

Titration of cerium sulphate showed that the percentage of iron(II) in ferrous sulphate tablet at room temperature is 20.083%. There are no changes after 3, 10 and 15 days of storage at 0°C , a continuous decrease in concentration occurred after storage for 10 and 25 days at sun light where the percentage dropped to 19.6% and 19.04% respectively. Few significant changes after storage for 15 and 25 days at 60°C were observed.

The percentage of iron(II) in ferrous gluconate tablet at room temperature is 5.559%. No change in concentration was observed after 3, 10 and 15 days storage at 0°C . Then a continuous decrease occurred after storage for 10, 20 and 30 days at sun light where the percentage was 5.551%, 5.53% and 5.17% respectively. Few significant changes were detected after storage for 10, 15 and 25 days at 60°C .

In ferric hydroxide poly maltose syrup, iron was quantified by atomic absorption. The quantity of iron(III) in 1ml of ferric hydroxide poly maltose syrup was 8.582mg and there are no changes in quantity after storage at 0°C , sun light and 60°C for 30 days.

المستخلص

أخذت عينات من ادوية مركبات الحديد وهى حبوب كبريتات الحديد(II) وجلوكونات الحديد(II) وشراب هيدروكسيد الحديد(III) بولى مالتوز لدراسة التغيرات التى تحدث للحديد اثناء تخزينها تحت ظروف مختلفة وهذه الظروف هى درجة الصفر درجة مئوية، ضوء الشمس المباشر و درجة 60⁰م وذلك لفترة زمنية مختلفة، هذه الدراسة أجريت عن طريق معايرة الحديد مع كبريتات السيريوم ، طريقة الامتصاص الذرى والاشعة تحت الحمراء.

أوضحت نتائج طريقة المعايرة أن النسبة المئوية للحديد(II) فى حبوب كبريتات الحديد(II) عند درجة حرارة الغرفة هى 20.083% وأنه لا يوجد اى تغيير فى هذه النسبة عند تخزينها لمدة 10، 3 و 15 يوم فى درجة الصفر درجة مئوية، بينما كان هنالك انخفاض فى نسبة الحديد الى 19.6% عند تخزينها فى ضوء الشمس المباشر لمدة 10 ايام و 19.04% لمدة 25 يوم.

أوضح التخزين عند 60⁰م انخفاض مستمر فى النسبة المئوية للحديد(II) الى 20.71% بعد 15 يوم ثم 19.67% بعد 25 يوم.

أما بالنسبة لحبوب جلوكونات الحديد(II) فقد وجد أن النسبة المئوية للحديد عند درجة حرارة الغرفة 5.559% وانه لا يوجد اى تغيير فى هذه النسبة بعد بعد تخزينها لمدة 3، 10 و 15 يوم فى درجة الصفر درجة مئوية، بينما كان هنالك انخفاض طفيف فى نسبة الحديد(II) الى 5.551% عند التخزين فى ضوء الشمس المباشر لمدة 10 يوم، 5.53% لمدة 20 يوم و 5.17% لمدة 30 يوم.

أوضح التخزين عند 60⁰م انخفاض مستمر فى النسبة المئوية للحديد(II) الى 5.54% بعد 10 يوم، 5.35% بعد 15 ثم 5.03% بعد 25 يوم.

أستخدمت تقنية الامتصاص الذرى لتحديد تركيز الحديد(III) فى شراب هيدروكسيد الحديد(III) بولى مالتوز ووجد ان تركيز الحديد(III) فى 1 مل 8.582 ملجرام وأنه لا يوجد اى تغيير فى هذه الكمية عند تخزين الشراب لمدة 30 يوم فى درجة الصفر، ضوء الشمس المباشر و 60⁰م.

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