

Consell Superior d'Investigacions Científiques

INSTITUT D'INVESTIGACIONS QUÍMIQUES I AMBIENTALS

DE BARCELONA "JOSEP PASCUAL VILA" (IIQAB)

Jordi Girona, 18-26 - 08034 Barcelona (Espanya)

Tel. (34) 93 400 61 00 - Tel. (34) 93 400 61.....

Telefax (34) 93 204 59 04 - E-mail:

Internet: <http://www.cid.csic.es>

## IRON ABSORPTION AFTER ORAL ADMINISTRATION OF DIFFERENT DOSSAGE FORMS.

### Efficiency of LIPOFER DISPERSIBLE iron absorption in rats

In order to study the efficiency of LIPOFER DISPERSIBLE on iron absorption, laboratory trials were carried out on rats.

Four groups of rats weighing 230-250 gr were stored in separate cages. Experiments started at least three days after arrival.

Three different iron forms, suspended in a 1% carboxymethyl cellulose, were administered orally directly in the esophagus:

- LIPOFER DISPERSIBLE (Code:99 K)
- ferrous sulfate
- ferric pyrophosphate
- control (Carboxymethyl Cellulose)

The iron content of the salts administered was equivalent in all cases (10 mg/kg of animal weight).

At different times rats were anesthetized and blood extracted through heart puncture (three animals per time).

Blood samples were centrifuged and the concentration of iron in the supernatants (blood serum) quantified through atomic absorption.

## RESULTS

Results obtained are represented in Fig. 1, as iron concentration ( $\mu\text{g/dL}$ ) versus Time (hours).

The pharmacokinetic profile of Lipofer 99K compared to ferric pyrophosphate shows higher values at any time.

Besides, comparing the pharmacokinetic profile of Lipofer 99K to that of ferrous sulfate one can appreciate that the iron concentration in blood is always higher with Lipofer 99K and there is also a sustained release.

Lipofer Dispersible 99K allows a sustained release of iron during the whole trial.

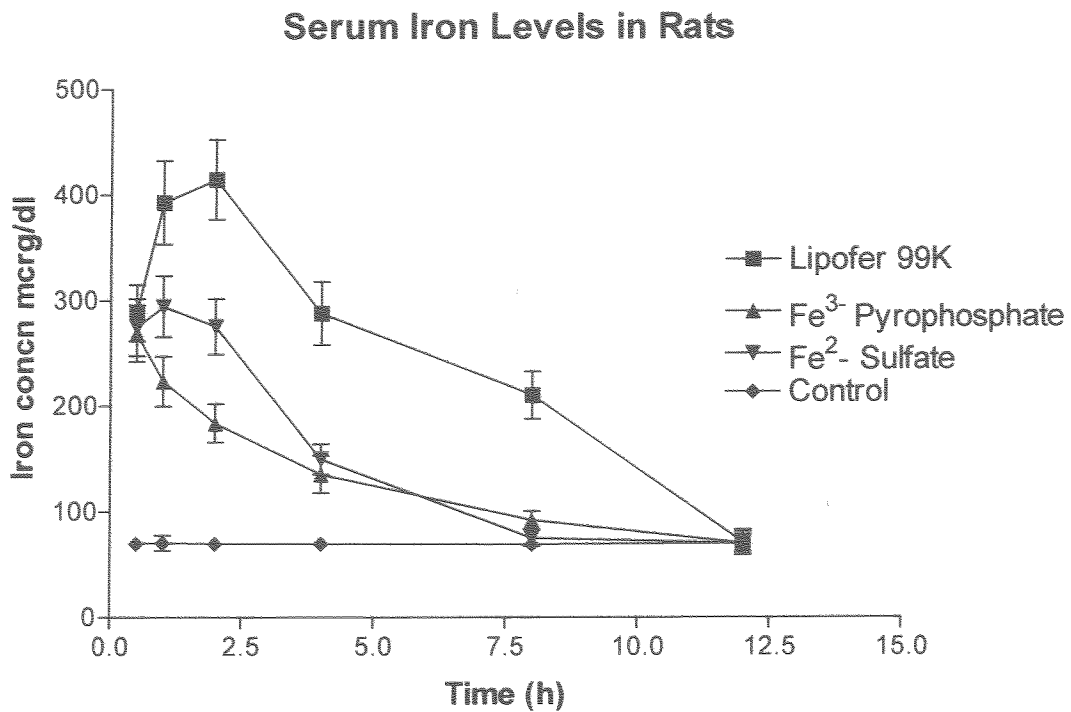


Figure 1.-Iron concentration measured at different times.

The corresponding area under the curve values calculated from media values applying the trapezoidal procedure give the following:

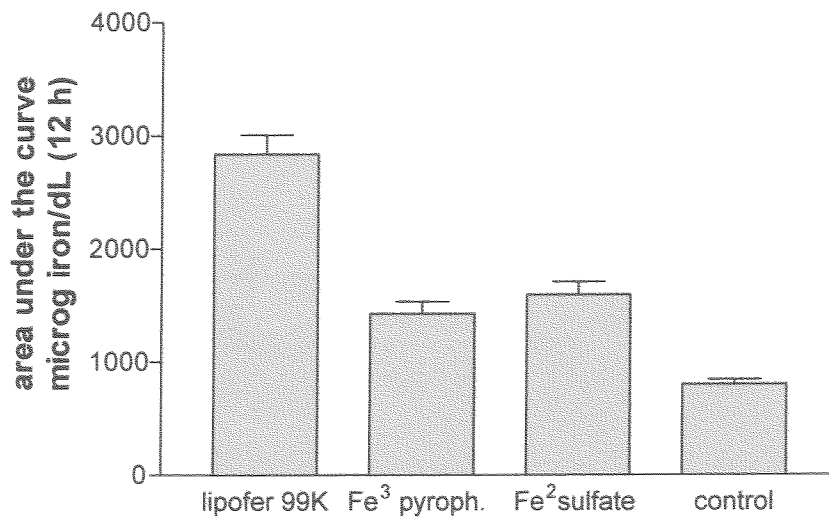
LIPOFER DISPERSIBLE (99K): 2826  $\mu\text{g}/\text{dl}$

Ferrous sulfate: 1550  $\mu\text{g}/\text{dl}$

Ferric pyrophosphate: 1380  $\mu\text{g}/\text{dl}$

Control: 806  $\mu\text{g}/\text{dl}$

These results are represented in Histogram 1



Histogram 1.- Area under the curve values for the different iron dosages.

## CONCLUSIONS

Total iron absorption is higher when this element is administered in form of Lipofer 99K. Comparing the values under the curve obtained for free and microencapsulated (Lipofer 99K) ferric pyrophosphate, versus basal values, one can say that the increase in iron concentration in blood promoted by the microencapsulated form is 3.5 times higher than that of free salt. Besides, compared to ferrous sulfate this increase is 2.7 times higher. These differences are significant.

A handwritten signature in black ink, appearing to read 'Dra. Francesca Reig Isart', is written over a circular stamp. The stamp contains the text 'CENTRO DE INVESTIGACION Y DESARROLLO' around the top edge and 'C.S.I.C.' at the bottom. In the center of the stamp is a stylized tree or plant logo.

Dra. Francesca Reig Isart  
Research Professor  
Institute for Biological and Environmental Chemistry. CSIC.

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