



μ

μ

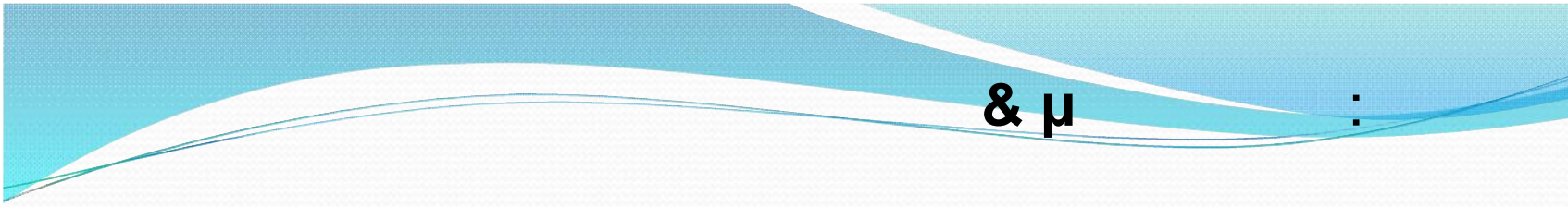
μ

μ

μ

μ.

.



& μ

:

20 °C)

(-70 °C),

(-

μ

μ

.

μ

μ μ

(2-8 °C).

μ

μ

μ

μ

μ

.

μ

μ

μ

μ

μ

μ

μ

μ



, μ , , μ



μ (μ)
μ μ → μ
μ (μ)

μ

:

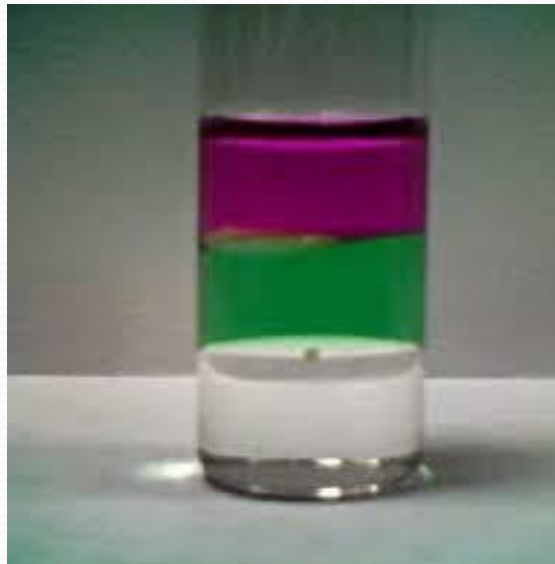


μ μ μ μ μ



(LLE)

-
 μ μ μ μ ,
_____ μ μ .
 μ μ ,
:
1:5-10.
 μ pH μ μ
, , μ μ μ .



μ

μμ , μ



(SPE)

1.

(μ ,)

2.

μ ()

3.

(μ)

4.





μ

μ (On-line clean-up)

μ

μ

μ

μ

μ

μ

μ

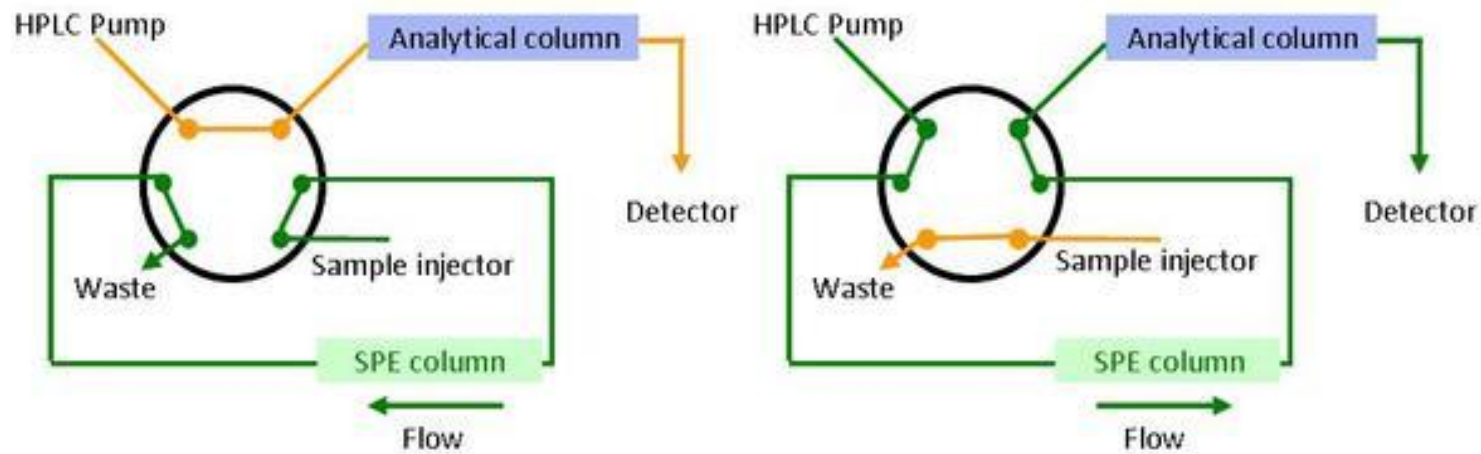
μ

(extraction columns).

μ

μ

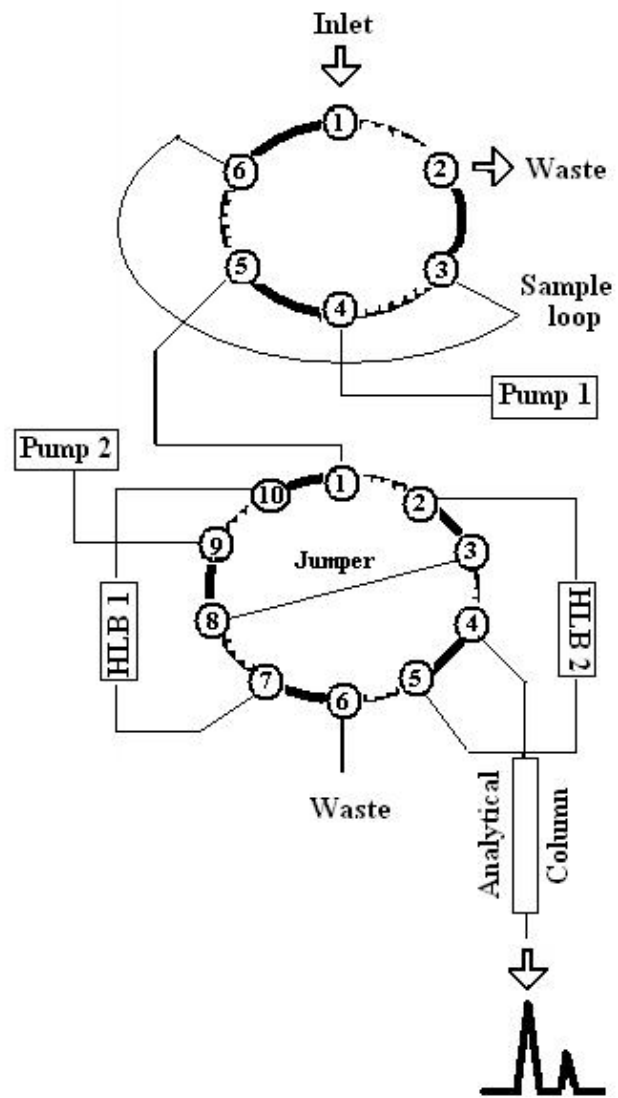
μ



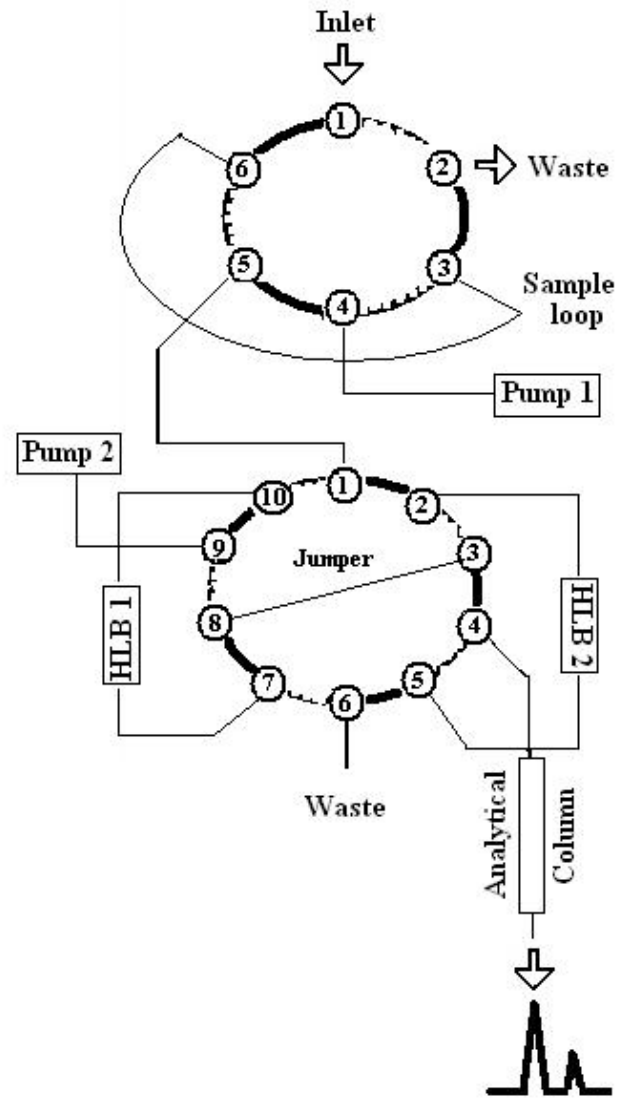
Sample injection and washing (1 and 2)

Sample elution and analysis (step 3)

Configuration A



Configuration B

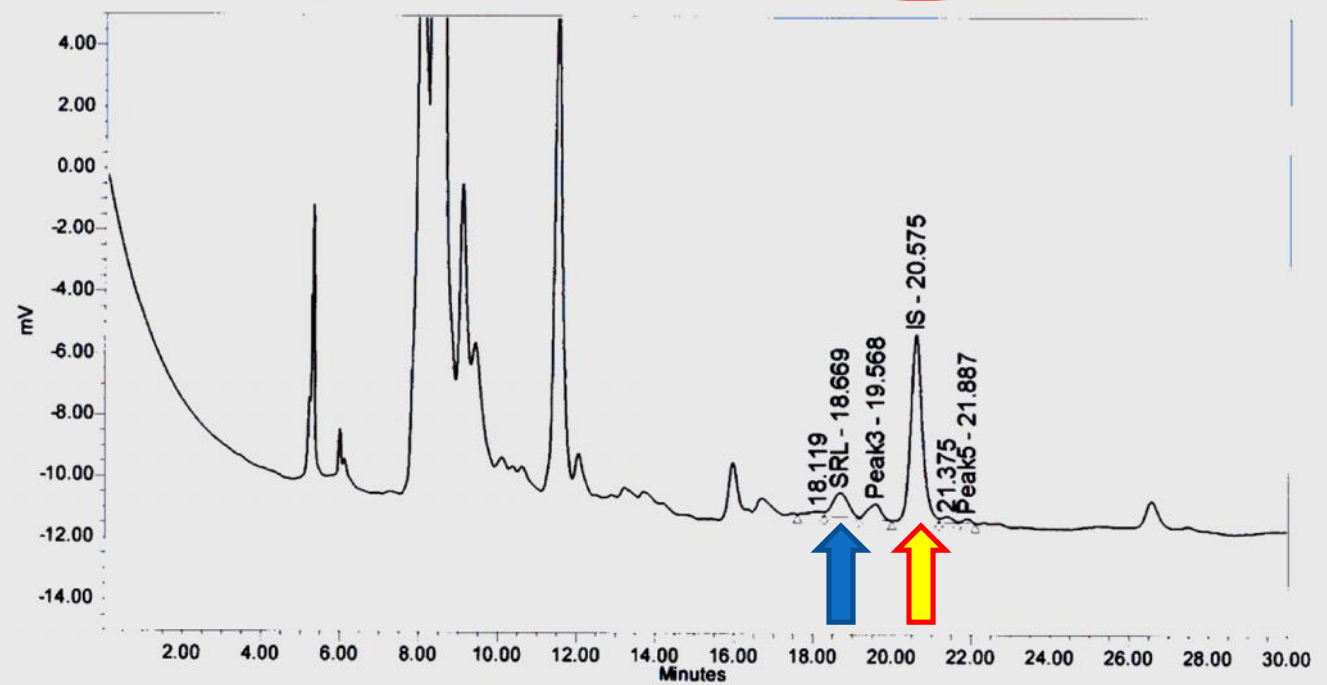


Sirolimus: HPLC – UV Example

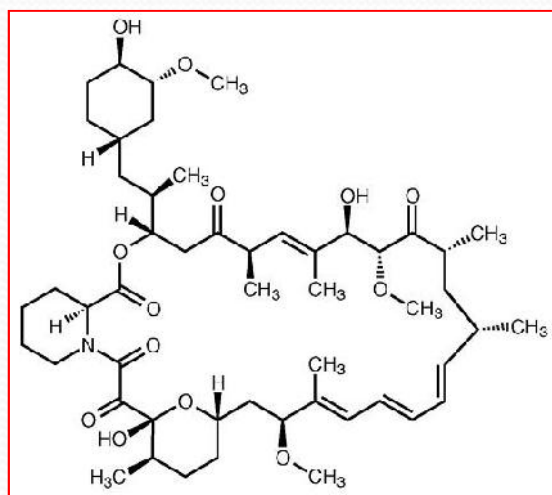
μ μ , μ

SAMPLE INFORMATION

Sample Name:	Sample-2	Acquired By:	System
Sample Type:	Unknown	Date Acquired:	1/25/02 6:10:25 PM
Vial:	7	Acq. Method Set:	Sirolimus
Injection #:	1	Date Processed:	1/25/02 6:40:27 PM
Injection Volume:	80.00 ul	Processing Method:	Intégration Sirolimus1
Run Time:	30.0 Minutes	Channel Name:	Satin Ch 1
Sample Set Name:	Run 25 janvier 2001	Proc. Chn. Descr.:	278 nm



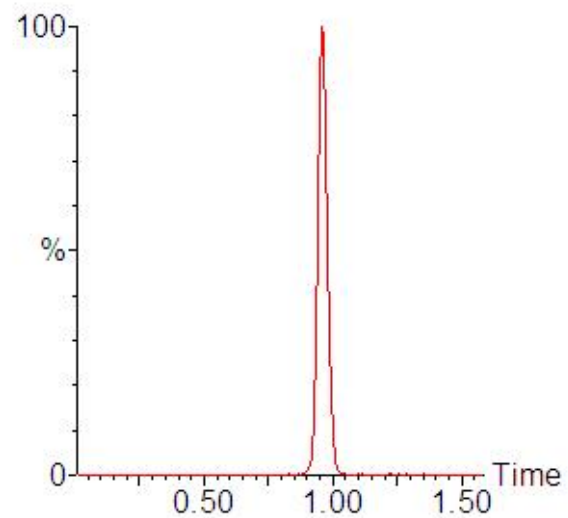
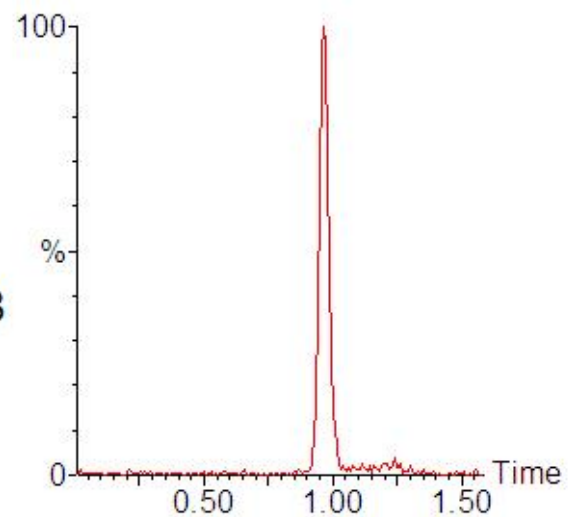
Sirolimus: LC – MS/MS



MRM m/z 821>768



IS



Αυτοματοποίηση μεθόδων κατεργασίας

Πλάκες 96-θέσεων



Ρομποτικά συστήματα διαχείρισης υγρών



Πλεονεκτήματα

- ✓ Σημαντικά μικρότερος χρόνος αναλυτικής πορείας
- ✓ Εξοικονόμηση χρόνου για τον αναλυτή
- ✓ Ελαχιστοποίηση λαθών

μ

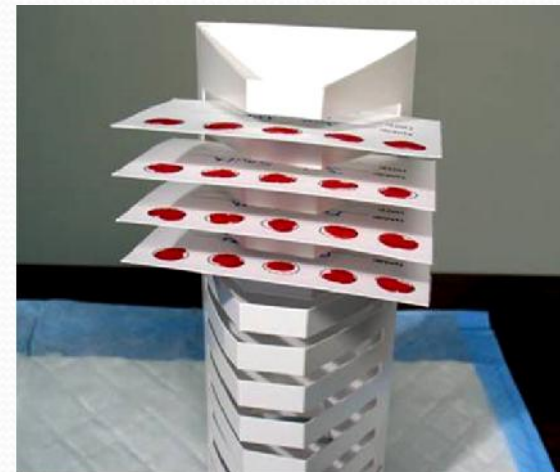
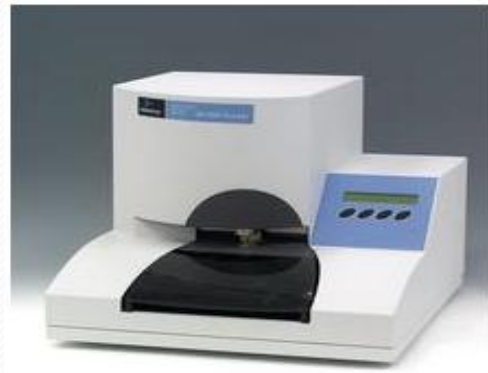
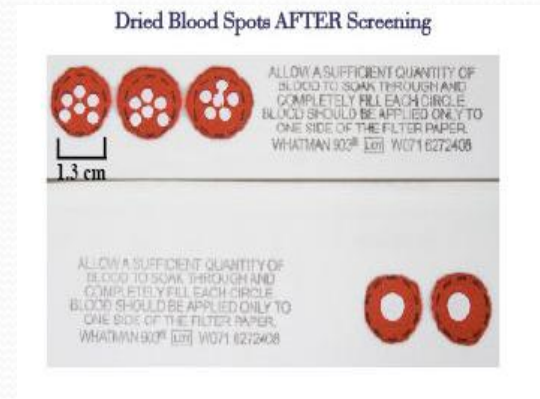
μ

μ

- μ
Matrix Spots)

(Dried

- Dried **Blood** Spots (DBS)
- Dried **Plasma** Spots (DPS)
- Dried **Urine** Spots (DUS)





μ

(Dried Matrix Spots)

(Guthrie card,
(

Whatman 903)
μ).

μ

μ

μ

,

μ

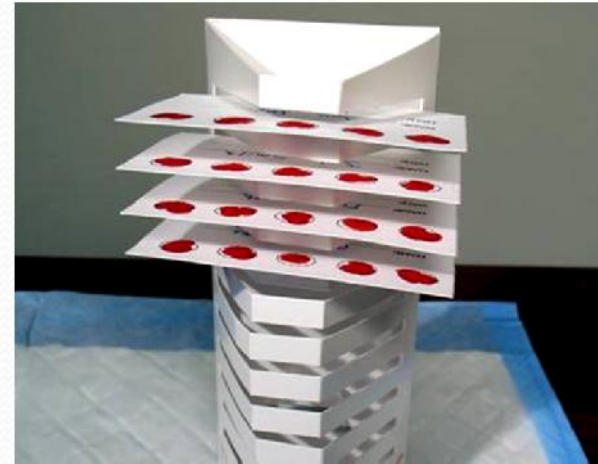
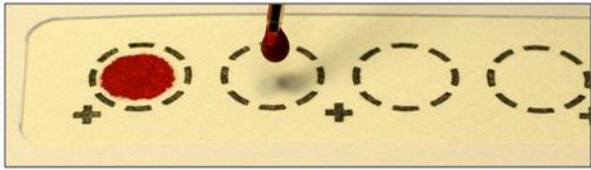
μ

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Πίνακας Συσχέτιση διαμέτρου κηλίδας με περιεχόμενη ποσότητα ολικού αίματος (αντιστοιχεί σε 50.1% αιματοκρίτη

ΔΙΑΜΕΤΡΟΣ ΚΗΛΙΔΑΣ (mm)	ΕΠΙΦΑΝΕΙΑ (mm ²)	ΠΕΡΙΕΧΟΜΕΝΗ ΠΟΣΟΤΗΤΑ ΟΛΙΚΟΥ ΑΙΜΑΤΟΣ (μL)
3	7.1	3.1
4.7	17.3	7.6
6	28.3	12.4
2 x 4.7	34.7	15.2

μ DBS (μ)



(. . EDTA)
 μ μ
 μ μ

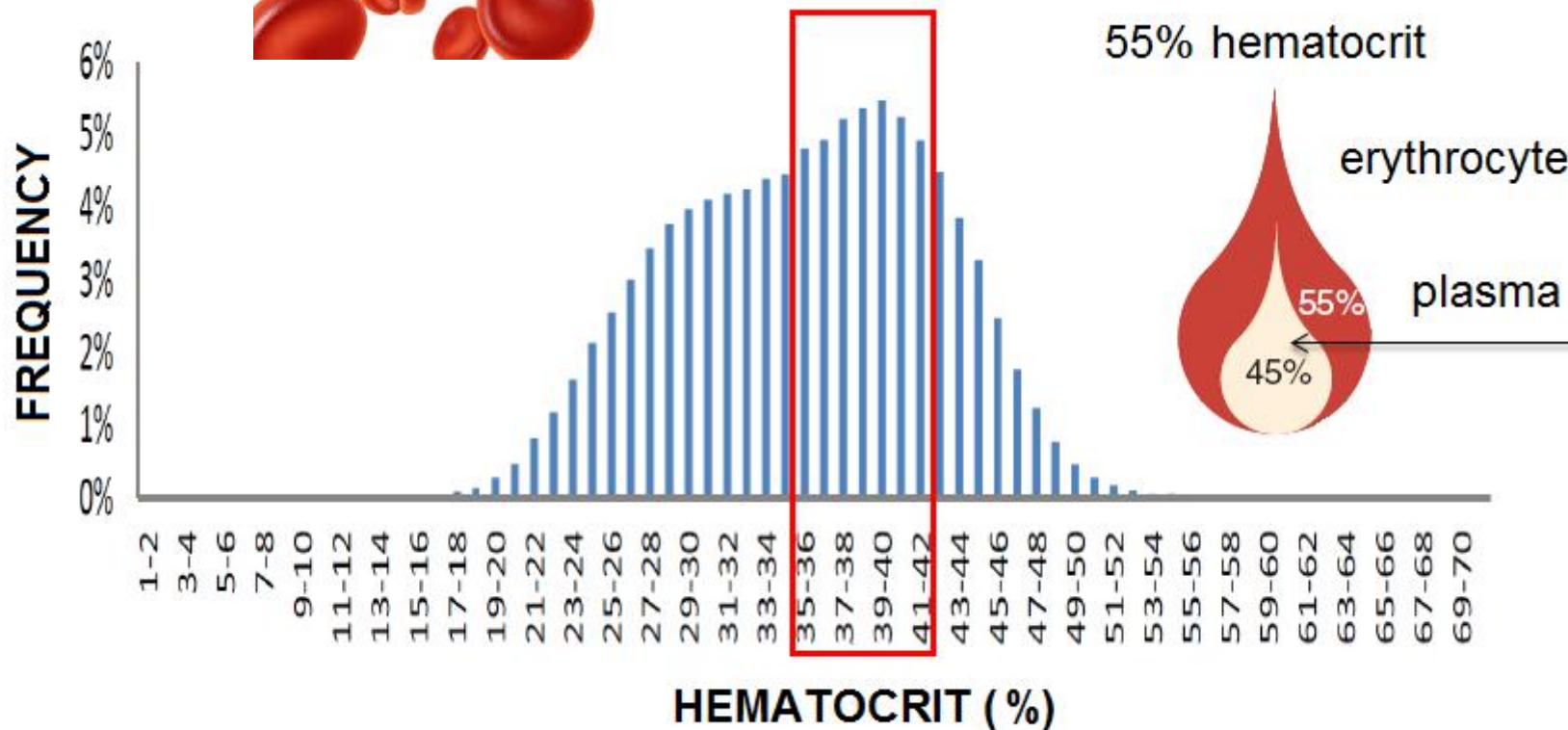


μ

μ , μ μ 1 - 2

Φαινόμενο αιματοκρίτη

Ht% είναι το ποσοστό του αίματος που αντιστοιχεί στα ερυθροκύτταρα.



μ

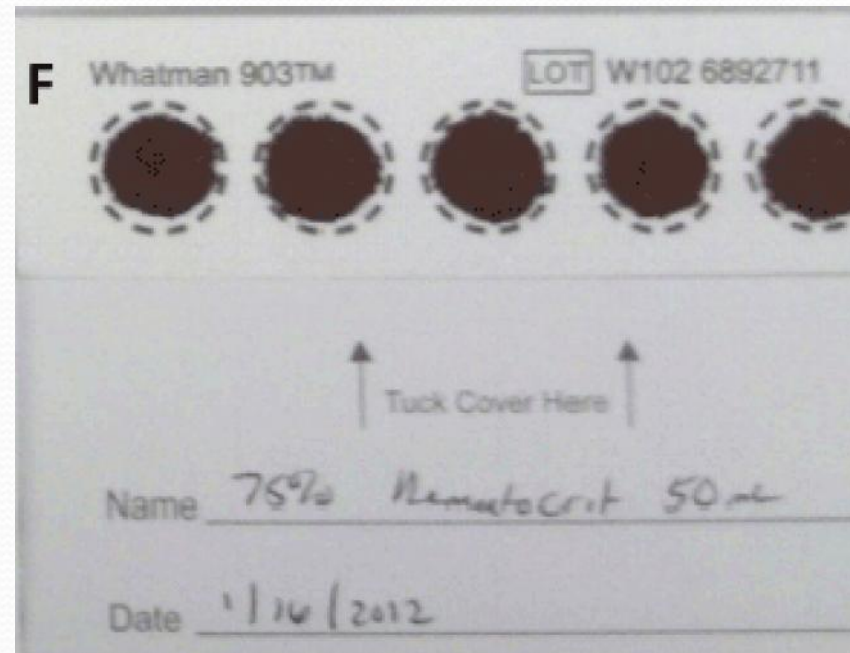


μ

25

μ

,



μ

75

μ

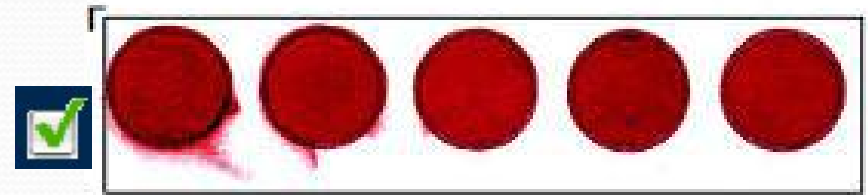
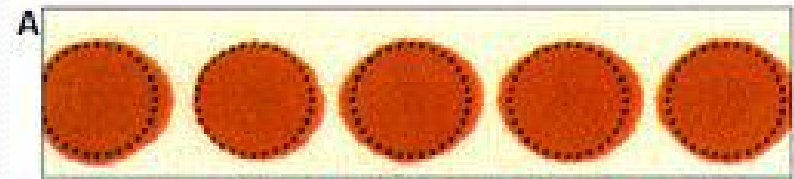
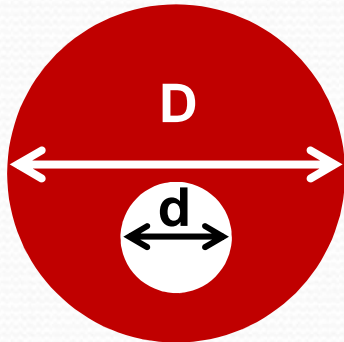
!!!!



μ (DBS) o

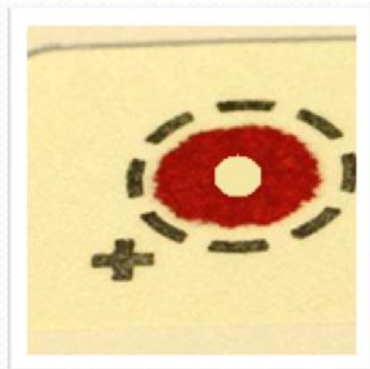
μ , μ μ , μ μ .

$$V_{disk} = \frac{A_{disk}}{A_{spot}} V_{spot} = \frac{f \left(\frac{d}{2} \right)^2}{f \left(\frac{D}{2} \right)^2} V_{spot} = \left(\frac{d}{D} \right)^2 V_{spot}$$



➤ Ανάλυση δειγμάτων DBS

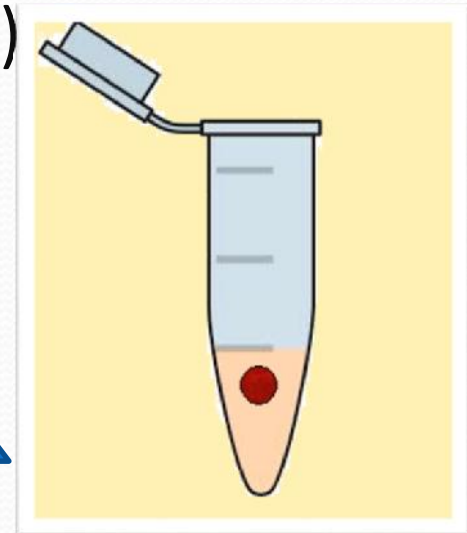
- Λήψη δίσκου
- Προσθήκη διαλύτη εκχύλισης (φιαλίδιο, 96-well plate)
- Ανακίνηση
- Εξάτμιση, ανασύσταση
- Ανάλυση (ανίχνευση, ποσοτικοποίηση)



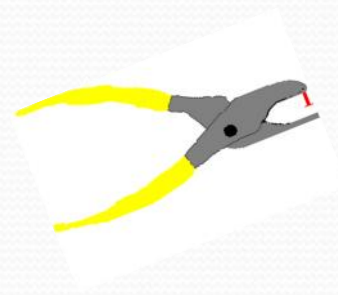
punching



extraction



➤ Puncher



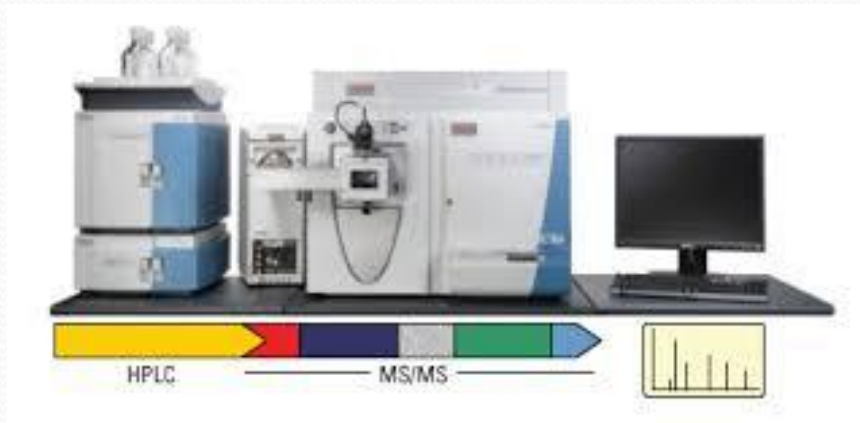
μ

...



➤ Εξοπλισμός

- LC-MS/MS
- UV-spectrophotometer
- Fluorescence, chemiluminescence detector κτλ



μ DBS (vs plasma)

- 1) ()
- 2) μ μ
- 3) /μ μ
- 4) ()
- 5)
- 6) μ
- 7) μ (μ)
- 8) - μ
- 9) μ (matrix effect)





μ DBS (vs plasma)

- 1) μ μ (μ ;)
- 2) μ μ μ
- 3) μ ‘ ’
- 4) μ (μ ;) μ
- 5)
- 6) μ
- 7)

DBS:

-
(μ
 μ μ
 μ)



-
 μ (*Therapeutic drug monitoring/PK*
studies)

-

- (*DNA analysis*)

