iCheck Fluoro

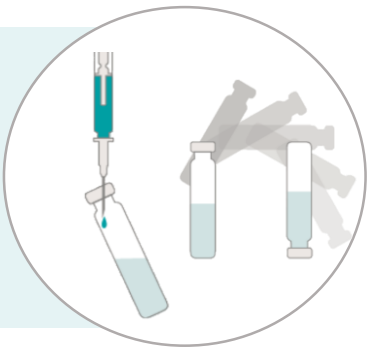
Measuring Vitamin A in Breast Milk and Blood

Sample Preparation

- Make sure that the breast milk sample is homogenous and that the collection method controls for the fat content.
- Both whole blood and serum (or plasma) can be measured.

Sample Injection

- Homogenize the sample and carefully take up 0.7 mL of the sample into syringe.
- Place the needle on syringe and adjust volume to exactly 0.5 mL.
- Inject 0.5 mL into Fluoro reagent vial and shake the vial vigorously for 10 seconds. Let the vial stand for min. 5 minutes.

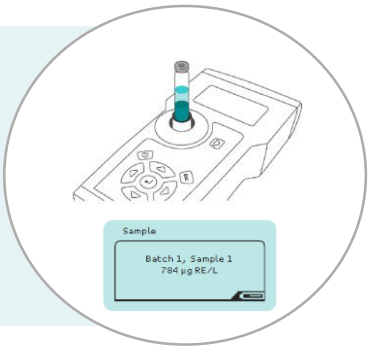


Phase Separation

- Clear phase separation must be visible in the vial. The upper phase, of about 0.8 cm height, must be clear without any particles floating or adhered to the inner side of the glass.

Measurement and Calculation

- Place the vial in the iCheck Fluoro and measure.
- The result is displayed in µg RE (retinol equivalents) / L.
- For whole blood samples the result must be corrected with red cells volume = hematocrit.
- See the back for the calculations.



Notes: Detailed instructions and technical material are available on www.iCheckAcademy.org.
For more information contact support@bioanalyt.com.

References: 2012_Vitamin A in sugar and breast milk_CeSSIAM
2014_Engle-Stone_Vitamin A in breast milk and comparison to HPLC_EJCN
2015_Aglago_Comparison to HPLC in serum retinol_African Health Sciences

iCheck Fluoro
Calculations

1. **iCheck Fluoro measurement range is 50 – 3000 µg/L. If your sample is above this range, you need to dilute it.**

2. **Whole Blood**
   For the determination of the vitamin A concentration in whole blood the hematocrit (Ht or HCT) or packed cell volume (PCV) needs to be considered. Please use the calculation below:

   Sample concentration [µg RE/L] =
   iCheck Result [µg RE/L] x 100 / (100 – Ht [%])

If the Ht is not available, use an average value as indicated for various subjects in the table below:

Subjects	Ht [%]	Ht [Standard International Unit]
New-borns	48 - 69	0.48 – 0.69
One week of age	47 - 63	0.47 – 0.63
One month of age	37 - 49	0.37 – 0.49
Three months of age	30 - 36	0.30 – 0.36
One year of age	31 - 40	0.31 – 0.40
Ten years of age	36 - 40	0.36 – 0.40
Adult males	39 - 49	0.39 – 0.49
Adult females	33 - 43	0.33 – 0.43