

Refactoring (Calibrating) a Parameter on the InSight DB

The following instructions describe the process for refactoring a parameter when QC results are out of the target range.

Please note:

1. Reagents are usually stable for at least 28 days from first opening of the bottles (some reagents have less stability eg Creatinine R2), however there may be a **small amounts of drift** in the QC values, which can be corrected by adjusting the calibration factor (K value).
2. Please be aware that requirement to change the K value by a large amount could indicate something other than reagent performance.
3. All changes to K value should be validated by checking that QC values have been brought in to range after the change.

This is an example where the ALT result of 37 U/L for the QC value is out of range.

The screenshot displays the 'REPORT' section of the InSight DB software. On the left is a sidebar with navigation buttons: CUSTOMER, PARAMETER, QC, SCHEDULE, REPORT, STATISTICS, MAINTENANCE, RUN MONITOR, and EXIT. The main area is divided into 'Patient Information' and 'Results' tabs. The 'Results' tab is active, showing a table of test results for Sample ID 1. The table has columns: No., Item, Result, Prompt, Unit, Lower, High, and Remark. The ALT result (row 3) is 37 U/L, which is below the lower limit of 40 U/L, indicating it is out of range. Other results include ALB (42 g/l), ALP (89 U/L), AMY (121 U/L), CA (3.40 mmol/L), CHOL (4.7 mmol/L), CREA (164 umol/L), GLUC (5.7 mmol/L), PHOS (1.60 mmol/L), TBil (42.0 umol/L), TP (62 g/l), and UREA (6.8 mmol/L). The interface also includes fields for Patient ID, Name, Gender, Age, Hospital number, Department, Doctor name, and Collect date. Buttons for 'Save', 'Delete', 'Refresh', 'Printview', 'Print', 'Backup print', 'Send to LIS', and 'Excel' are visible at the bottom.

No.	Item	Result	Prompt	Unit	Lower	High	Remark
1	ALB	42		g/l	33	47	
2	ALP	89		U/L	77	129	
3	ALT	37	L	U/L	40	80	
4	AMY	121		U/L	119	159	
5	CA	3.40	H	mmol/L	1.90	2.30	
6	CHOL	4.7		mmol/L	3.7	5.3	
7	CREA	164		umol/L	102	190	
8	GLUC	5.7		mmol/L	5.4	6.4	
9	PHOS	1.60		mmol/L	1.23	1.69	
10	TBil	42.0		umol/L	27.0	45.0	
11	TP	62		g/l	58	74	
12	UREA	6.8		mmol/L	4.9	8.5	
13	A/G Ratio	2.10			0.00	60.00	

Select parameter > Select ALT

The screenshot shows the 'PARAMETER' configuration window for the 'ALT' parameter. The left sidebar contains navigation buttons: CUSTOMER, PARAMETER, QC, SCHEDULE, REPORT, STATISTICS, MAINTENANCE, RUN MONITOR, and EXIT. The main window has tabs for Test Parameter, Profile, Item-Test sequence, Calculation item, External parameter, and Reflex test. The 'Item-Test sequence' tab is active, showing a list of items on the left and configuration details for 'ALT' (Code 11) on the right.

Configuration Details for ALT:

- Method:** Kinetic, RATE_A, Decreasing, Substrate depleted Limit: 0.500
- Primary filter:** 340, **Secondary filter:** NO, **Unit:** U/L, **Decimal:** 0
- R1 Volume:** 200, **R1 Position:** 15, **Incubation time (sec):** 144, **Volume:** 18
- R2 Volume:** 70, **R2 Position:** 16, **Incubation time (sec):** 50, **Volume:** 5
- Sample volume:** 20.0, **Read time (sec):** 200, **Mix speed set:** Middle, **(R1+R2)+S:** ☐
- D. Sample:** 1, **Diluent:** 5, **Pre_dilute:** ☐ Auto retest
- Y=:** 1.0, **X=:** 0.0
- Reagent blan:** 1.5116, **0.0000**, **0.3450**
- Linear range:** 666.00
- Reagent suppliers:** sages, **Lysing agent:** ☐
- R1 reagent information:** Lot number: 585158, R1 Barcode: , Expiry Date: 22/06/2025, Valid days:
- R2 reagent information:** Lot number: 585158, R2 Barcode: , Expiry Date: 22/06/2025, Valid days:

Buttons at the bottom: Add, Delete, Save, Printview, Print, Import, Export.

The screenshot shows the 'Calibration' tab for the 'ALT' parameter. It displays a graph of the calibration curve and a table for standards.

Calibration Curve:

- Number of standards:** 6
- Calib Curve:** (dropdown menu)
- K value:** 2667.00
- Cali. Hist.:** (button)

Standards Table:

Standard	Concentration	Optical Density
1		
2		
3		
4		
5		
6		

Buttons at the bottom: Add, Delete, Save, Printview, Print, Import, Export.

The current K value, above, is 2667,

The target value for ALT is 60

New K Value is calculated as follows:

(parameter QC target value /QC result) x current K value

in this example = (60/37) x 2667 = new K value 3790

Change the K value in box to 3790 and press Save

The screenshot shows the 'PARAMETER' configuration window for item 'ALT' (Code 11). The 'K' value is set to 3790.00. The interface includes a sidebar with navigation buttons (CUSTOMER, PARAMETER, QC, SCHEDULE, REPORT, STATISTICS, MAINTENANCE, RUN MONITOR, EXIT) and a main area with tabs for Test Parameter, Profile, Item-Test sequence, Calculation item, External parameter, and Reflex test. The 'Basic parameter' tab is active, showing a calibration curve graph and a table for standards.

Item	Code
TP	1
ALB	2
UREA	3
CA	4
TBil	5
CHOL	6
GLUC	7
CREA	8
ALP	9
AMY	10
ALT	11
PHOS	12
AST	13
CK	14
GGT	15
IGG	16
FRUC	18
TRIG	19
UPRO	20
UCREA	21
MAG	22
BILE	23

Number of standards: 0

Calib Curve: [Dropdown]

1 [] [] []

2 [] [] []

3 [] [] []

4 [] [] []

5 [] [] []

6 [] [] []

K = 3790.00

Cali. Hist.

Add Delete Save Printview Print Import Export

VERSION Logs QVD Administrator Operator:ADMIN 05/09/2022 PM 03:05:39

Now repeat the QC test to validate the change to the K value, QC result should now be in the target range, if results are still outside the range please repeat this process, but also consider that there may be other reasons for the QC results being outside range, for example:

- Compromised reagents
- Old or faulty QC material
- Bubbles on the surface of the reagent or QC sample
- Hardware faults