

Magnesium Assay (2nd gen.) for Cedex Bio and Bio HT Analyzers

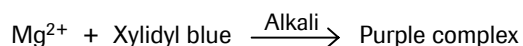
Improved reagent stability for optimal reliability and convenience

In cell cultures and microbial fermentation, a sufficient supply with magnesium ions is essential for growth and productivity of the cultures. Especially in fast consuming bacterial cultures, or in any culture with a significant phosphate concentration in the medium, it can be necessary to control the magnesium concentration by periodic determination and adequate feed.

The new test generation V2 for determination of magnesium on Cedex Analyzers produces equivalent results compared to the previous kit generation, and due to the improved reagent stability the assay is more robust against influences, the kit handling is more convenient, and a lower determination limit provides more sensitivity.

Assay principle

In the Cedex assay, a xylydyl blue diazonium salt forms a purple complex with magnesium, while EGTA is used to mask calcium for prevention of an interference. The photometrically measured decrease of absorbance of the unbound xylydyl blue at 629 nm correlates to the magnesium concentration of the sample.



Improved new test generation V2: Wide range, high accuracy

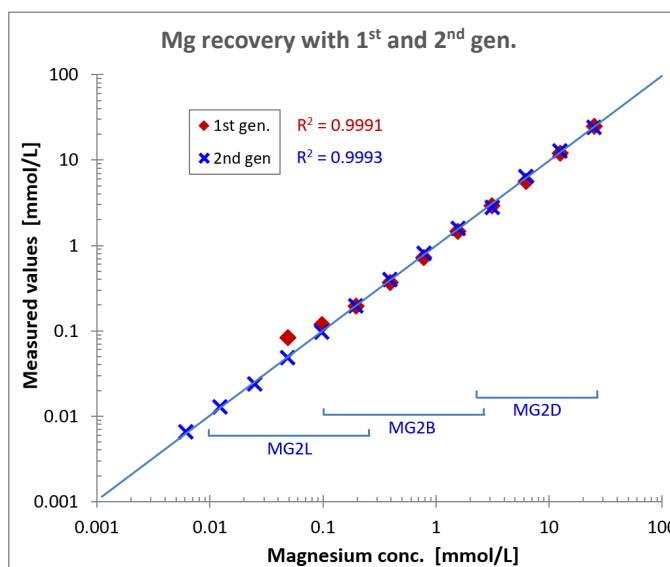


Figure 1: The magnesium recovery with 1st and 2nd test generation on a Cedex Bio HT Analyzer is consistent. Linearity of V2 is slightly improved and three protocols (low/med/high range) are used for a wider concentration range and a lower determination limit.

(Evaluation data of Roche Diagnostics)

Compared features of the two test generations:

Feature	1 st gen.	2 nd gen. V2
Measuring range total	0.15 – 250 mmol/L, 3.65 – 6 078 mg/L	0.01 – 250 mmol/L, 0.24 – 6 078 mg/L
Protocol ranges in mmo/L	--- MGB: 0.15 - 2.5 MGD: 1.5 - 25 dilution: up to 250	MG2L: 0.01 - 0.25 MG2B: 0.1 - 2.5 MG2D: 2.3 - 25 dilution: up to 250
Sample volume	2 µL (MGB)	3 µL (MG2B)
Time to result	7 min appr.	8 min appr.
Storage	2 to 8°C	room temp.
Calibration	once per lot	once per lot

High precision

	Level 1	Level 2	Level 3
Mean conc.	0.88 mmol/L, 21.3 mg/L	1.4 mmol/L, 32.8 mg/L	1.7 mmol/L, 40.6 mg/L
CV in-run	1.3%	0.6%	0.7%
CV inter-run	1.7%	0.8%	3.5%

Precision was determined using the V2 test on a Cedex Bio HT Analyzer with samples of three concentration levels. Coefficients of variation (CV) were calculated for in-run precision (n=84) and inter-run precision (on 21 days). Representative performance data are shown. Results obtained in individual laboratories may differ.

(Evaluation data of Roche Diagnostics)

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Ordering information

For determination of magnesium, the following products are required in addition to the Cedex instrument with the general system reagents and accessories:

Product	Pack size	Catalog no.
Magnesium V2 Bio	4 x 50 tests	09 324 542 001
Magnesium V2 Bio HT	200 tests	09 324 569 001
Calibrator C Bio	6 x 1 ml	07 020 716 001
Control C Level 1 Bio	6 x 1 ml	07 020 724 001
Control C Level 2 Bio	6 x 1 ml	07 020 872 001
Control C Level 3 Bio	6 x 1 ml	07 020 902 001

Regulatory disclaimer

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