



Providing an Analytical Solution: Dairy Foods and Infant Formula



In a dairy market that is increasingly globalised and constantly changing, manufacturers continue to strive for the same goal: Quality.

Megazyme's signature **assay kits** allow manufacturers to measure key parameters such as **sugars, acids and carbohydrates** in a convenient and cost-effective way. Researched and manufactured in-house, our products have attracted worldwide acclaim for their novel methodologies and the exceptional purity of their enzymes.

Think Quality • Expect Excellence • Choose Megazyme

The Megazyme range features products for the measurement of important analytes in dairy products and infant formula, including:

- Lactose
- Lactic Acid
- Urea/Ammonia
- Fructan and Fructo-oligosaccharides

[Find out more inside >>](#)



Measurement of Lactose in Lactose-Free and Low-Lactose Products

Final Action Status AOAC 2020.08

Megazyme's Lactose Assay Kit addresses the key challenges of measuring lactose in low-lactose samples, **producing a more accurate result** - greatly reducing the overestimation that occurs with lactose assay kits offered by competitors.

The manufacturing process which breaks down the naturally present lactose in the creation of lactose-free products also results in the formation of di- and tri- saccharides. These sugars interfere with most methods of lactose measurement. **Megazyme has developed a solution.**

Benefits of K-LOLAC over Common Enzymatic Assays

OFFICIAL METHOD	The first enzymatic method validated by a multi-laboratory evaluation and has been accepted as an Official Final Action Status: AOAC 2020.08.
SENSITIVE	Can quantify lactose at lower limits than all other available enzymatic assays - essential for low-lactose and lactose-free products.
EFFICIENT	First sequential enzymatic assay for lactose, i.e. reduced analyst hands-on time and increased cost-effectiveness,
SELECTIVE	Uses an exclusive enzyme which hydrolyses lactose more selectively than competing methods leading to reduced overestimation.
ACCURATE	Method includes 15 min pre-incubation step to remove high background glucose levels, allowing rapid accurate measurement in low-lactose and lactose-free products.

Examples of Applications for the K-LOLAC Lactose Assay Kit

- Standard and low-lactose/lactose-free dairy products
- Milk-derived food additives
- Foods containing milk (e.g. dietetic foods, bakery products, chocolates and confectioneries)
- Recently tested** Infant formula: values obtained for 'SMA-LF' and 'Aptamil Lactose Free' are in close agreement with those measured using chromatography-based methods



Why choose our Lactose Assay Kit? The K-LOLAC Difference

Our new Lactose Assay Kit (**K-LOLAC**) joins our bestselling Lactose/Galactose Assay Kit (**K-LACGAR**) as part of the Megazyme range for carbohydrate analysis. The Lactose Assay Kit is specifically designed for manufacturers testing low-lactose and lactose-free foods and beverages.

	Megazyme		Competitor
Kit	K-LOLAC	K-LACGAR	Lactose / D-Glucose Kit
Format	Sequential ^a	Non-sequential ^b	Non-sequential ^a
Number of lactose assays (samples)	65	57	32
Suitable for low-lactose and lactose-free samples	✓	X	X
Suitable for "regular" dairy samples	✓	✓	✓
Assay time for "lactose-free" in minutes	90	Not Recommended ^c	Not Suitable
Assay time for "regular" dairy samples in minutes	50	15	35 (20+15)
Supplied with reagents for pre-treatment	✓	X	X
Minimum reagent stability	2 years	2 years	6 months

a: requires a single cuvette: both determinations take place in a single cuvette

b: requires two cuvettes: one for free glucose/galactose, one for glucose/galactose released from lactose

c: Lactose over-estimation is likely to happen due to the presence of GOS and the low selectivity of the β -galactosidase used in the assay.



Measurement of Fructans and FOS in Food and Infant Formula

Fructans and fructo-oligosaccharides (FOS) are of increasing interest for manufacturers in areas as diverse as infant formula and animal feed. Fructans can serve as bulking agents, sweeteners, and as nutrients for digestive and immune health.

The potential benefits of fructan are evident for producers and consumers alike, but the accurate measurement of fructan in food and beverages presents a significant analytical challenge.



Fructan measurement made simple: the ONLY Fructan Assay Kits on the market

World exclusive: Megazyme is the only company to offer assay kits specifically for the measurement of fructan. Megazyme kits include ultra-pure components, stable reagents, simple formats and best-in-class technical support. The **K-FRUC** Assay Kit is recommended for use with AOAC Methods **999.03** and **2016.14**. Additionally, Megazyme produces highly purified amyloglucosidase, fructanase and sucrase which are suitable for use with AOAC Method **997.08** and **2016.06**.



AOAC Method 997.08

(Ion Exchange Chromatographic Method)

1. Lyophilised amyloglucosidase

Product Code	Product Name	No. Units
E-AMGFR	Amyloglucosidase (<i>A. niger</i>) 100 mg	3,500
E-AMGFR	Amyloglucosidase (<i>A. niger</i>) 500 mg	17,500

2. Fructanase (inulinase)

Product Code	Product Name	No. Units
E-FRMXPD	Fructanase Mixture (Powder)	20,000
E-FRMXLQ	Fructanase Mixture (Liquid)	40,000

AOAC Method 2016.14 (HPAEC-PAD)

1. Mixture of highly purified sucrase, β -amylase, pullulanase and maltase (Bottle 1)

2. Mixture of highly purified *exo*-inulinase and *endo*-inulinase (Bottle 2)

Product Code	Product Name	No. Assays
K-FRUC	Fructan Assay Kit	100

AOAC Method 999.03 and AACC 32-32.01

(Enzymatic/Spectrophotometric Method)

Product Code	Product Name	No. Assays
K-FRUC	Fructan Assay Kit Our most advanced kit: completely specific for fructans including levan, chicory, dahlia, onion, agave, wheat stems and leaves.	100

AOAC Method 2016.06 (HPAEC-PAD) and Chinese Standard GB 5009.255-2016

1. Fructanase

Product Code	Product Name	No. Units
E-FRMXPD	Fructanase Mixture (Powder)	20,000
E-FRMXLQ	Fructanase Mixture (Liquid)	40,000

2. Sucrase

Product Code	Product Name	No. Units
E-SUCR	Sucrase (from yeast)	300



Your Trusted Partner for Quality
Control in the Dairy Industry



Measurement of Lactose

Product Code	Product Name	No. Assays
K-LOLAC	Lactose Assay Kit Developed for use with low-lactose or lactose-free samples.	65
K-LACGAR	Lactose/Galactose Assay Kit (Rapid) Rapidly and accurately measures lactose and D-galactose.	57

Measurement of Other Sugars

Product Code	Product Name	No. Assays
K-MANGL	D-Mannose/D-Fructose/D-Glucose Assay Kit	55
K-MASUG	Maltose/Sucrose/D-Glucose Assay Kit	100
K-SUFRG	Sucrose/D-Fructose/D-Glucose Assay Kit	300

Measurement of Acids

Product Code	Product Name	No. Assays
K-DLATE	D-/L-Lactic Acid Assay Kit (Rapid)	100
K-LATE	L-Lactic Acid Assay Kit	50
K-DATE	D-Lactic Acid Assay Kit (Rapid)	50

Enzymes for Dairy Laboratories

Megazyme is world-renowned for producing **extremely pure** enzyme preparations, offering reliable results with every use.

Product Code	Product Name	No. Units
E-AMGDF	Amyloglucosidase (<i>A. niger</i>) 10 mL	32,600
E-AMGFR	Amyloglucosidase (<i>A. niger</i>) 100 mg	3,500
E-AMGFR	Amyloglucosidase (<i>A. niger</i>) 500 mg	17,500
E-AMGPU	Amyloglucosidase (<i>Rhizopus</i> sp.)	5,000
E-ISAMY	Isoamylase	600
E-ENDOIAN	endo-Inulinase (<i>A. niger</i>)	500
E-EXOIAN	exo-Inulinase (<i>A. niger</i>)	5,000
E-FRMXLQ	Fructanase Mixture (Liquid)	20,000
E-FRMXPD	Fructanase Mixture (Powder)	20,000
E-SUCR	Sucrase (from yeast)	300

Measurement of Urea and Ammonia

Product Code	Product Name	No. Assays
K-URAMR	Urea/Ammonia Assay Kit (Rapid)	100

Discover the complete range of Megazyme assay kits and enzymes - visit our website:

www.megazyme.com