

Joint Research Centre

Certified reference materials for food authenticity



Calibration kit for ruminant detection by PCR

	Copy number concentration of the plasmid indicative value (Cp/μL)
IRMM-AD482a	128
IRMM-AD482b	32
IRMM-AD482c	8

The calibration kit for ruminant detection by PCR is not a certified reference material because the copy number concentration values have only been determined in a single laboratory and the material have not yet been tested for long term stability. Consequently, the DNA copy number concentrations are provided as indicative values and not as certified values.

Isotope ratios for origin of food

	BCR-656 96% ethanol 25 mL	BCR-657 Sugar 1 g	BCR-660 Ethanol in water 450 mL
(D/H) _I by ² H-NMR [ppm]	102.84 ± 0.20		102.90 ± 0.16
(D/H) _{II} by ² H-NMR [ppm]	132.07 ± 0.30		131.95 ± 0.23
R by ² H-NMR	2.570 ± 0.005		2.567 ± 0.005
δ ¹³ C _{V-PDB} by IRMS [‰]	-26.91 ± 0.07	-10.76 ± 0.04	-26.72 ± 0.09
(D/H) _w of water by IRMS [ppm]	94.61 ± 0.05		148.68 ± 0.14
Alcoholic grade t _p [%]			11.96 ± 0.06

Origin of wine by SNIF-NMR

BCR-123, ethanol: The materials are available in units of 3 sealed NMR tubes containing respectively H-, M-, and L-ethanols, to which the tetramethylurea internal standard and the C6F6 lock substance are added. 10 mm (BCR-123A) or 15 mm (BCR-123B) O.D. NRM tubes can be supplied.

BCR-123			
Parameter	Ethanol H	Ethanol M	Ethanol L
(D/H) _I	109.65 × 10 ⁻⁶ ± 0.20 × 10 ⁻⁶	101.69 × 10 ⁻⁶ ± 0.17 × 10 ⁻⁶	90.30 × 10 ⁻⁶ ± 0.18 × 10 ⁻⁶
(D/H) _{II}	119.76 × 10 ⁻⁶ ± 0.25 × 10 ⁻⁶	130.94 × 10 ⁻⁶ ± 0.21 × 10 ⁻⁶	122.20 × 10 ⁻⁶ ± 0.4 × 10 ⁻⁶
R	2.184 ± 0.005	2.575 ± 0.006	2.708 ± 0.009

STA-003: Tetramethylurea (TMU) which is used as Internal Standard in routine SNIF-NMR analysis is available in 500 mL quantities. The D/H nominal value of tetramethylurea batches is determined by multiple calibration at 61.45, 61.43 and 61.42 MHz for deuterium and given in an accompanying analytical report.

Confidence in measurements

All certificates and detailed production information can be found at <https://crm.irmm.jrc.ec.europa.eu>



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Adulteration of cheese Ewes'/Goats' Curd (BCR-599)

BCR-599 consists of a set of two freeze dried curd materials made from a mixture of ewes' and goats' milk, intended to detect adulteration by cows' milk in cheeses made from ewes' or goats' milk, goats' milk according to the reference method described in Commission Regulation (EC) No. 1081/96. The 0 % material is not adulterated, the 1 % material is adulterated milk 1 % of cows' milk. Availability: BCR-599 is available as a set of two brown glass vials containing each about 15 g of lyophilised curd powder under argon atmosphere.

Adulteration of oils and fats

Material	Certified values			
IRMM-801 Cocoa Butter 5 g	1,3-dipalmitoyl-2-oleyl-glycerol	[%]	18.14 ± 0.26	
	palmitoyl-2-oleoyl-3-stearoyl-glycerol	[%]	44.68 ± 0.30	
	1,2-dioleoyl-3-palmitoyl-glycerol	[%]	2.26 ± 0.16	
	1,3-distearoyl-2-oleoyl-glycerol	[%]	31.63 ± 0.29	
	1,2-dioleoyl-3-stearoyl-glycerol	[%]	3.29 ± 0.17	
BCR-519 Anhydrous butter fat 5 mL	Cholesterol	[%]	0.30 ± 0.03	
	C24	[%]	0.05 ± 0.02	
	C26	[%]	0.25 ± 0.03	
	C28	[%]	0.59 ± 0.04	
	C30	[%]	1.15 ± 0.05	
	C32	[%]	2.43 ± 0.12	
	C34	[%]	5.64 ± 0.18	
	C36	[%]	10.47 ± 0.19	
	C38	[%]	12.53 ± 0.22	
	C40	[%]	10.03 ± 0.16	
	C42	[%]	6.69 ± 0.10	
	C44	[%]	6.11 ± 0.08	
	C46	[%]	6.86 ± 0.08	
	C48	[%]	8.69 ± 0.15	
C50	[%]	11.40 ± 0.24		
C52	[%]	10.96 ± 0.25		
C54	[%]	5.89 ± 0.13		
BCR-632 Butter fat Set of 2 amber glass ampoules each 5 mL. A: pure B: adulterated			BCR-632A	BCR-632B
	C24	[%]	0.07 ± 0.04	0.08 ± 0.04
	Cholesterol	[%]	0.289 ± 0.012	0.278 ± 0.011
	C26	[%]	0.33 ± 0.06	0.34 ± 0.06
	C28	[%]	0.74 ± 0.07	0.75 ± 0.06
	C30	[%]	1.37 ± 0.08	1.46 ± 0.07
	C32	[%]	2.83 ± 0.14	3.30 ± 0.12
	C34	[%]	6.09 ± 0.29	6.57 ± 0.25
	C36	[%]	10.7 ± 0.5	11.1 ± 0.4
	C38	[%]	12.5 ± 0.4	12.7 ± 0.4
	C40	[%]	10.05 ± 0.19	10.07 ± 0.17
	C42	[%]	7.07 ± 0.13	7.10 ± 0.10
	C44	[%]	6.68 ± 0.12	6.57 ± 0.12
	C46	[%]	7.36 ± 0.17	7.12 ± 0.17
	C48	[%]	8.74 ± 0.21	8.42 ± 0.19
	C50	[%]	10.74 ± 0.24	10.28 ± 0.19
	C52	[%]	9.8 ± 0.4	9.36 ± 0.28
C54	[%]	4.7 ± 0.5	4.5 ± 0.4	
BCR-633 Anhydrous butter fat 5 g	β-Apo-8'-carotenic acid ethyl ester	[mg/kg]	26.5 ± 1.4	
	β-Sitosterol	[mg/kg]	530 ± 29	
	Stigmasterol	[mg/kg]	147 ± 11	
	n-Heptanoic acid triglyceride	[g/kg]	1.06 ± 0.04	

How to order reference materials

From JRC in Geel

Tel.: +32 14 571 705 • Fax: +32 14 590 406 • <https://ec.europa.eu/jrc/en/reference-materials> • E-mail: jrc-irrm-rm-distribution@ec.europa.eu

From authorised distributors

LGC Standards GmbH (DE)
<http://www.lgcstandards.com/>
E-mail: de@lgcstandards.com

Sigma-Aldrich RTC Inc. (USA)
<http://www.RT-Corp.com>
E-mail: RTCSalesgroup@sial.com

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