

欧盟微生物标准物质

本目录为微生物欧盟标准物质，IRMM 和 BCR 是 JRC-EC-IRMM 的注册商标，均是以欧盟委员会联合研究中心标准物质与测量研究院(IRMM)为核心研发的标准物质（CRM）。

*基于欧盟相关国家法律规定和当地海关要求，订购微生物标准物质前，需要由最终用户填写《自用说明》并直接邮递至国外。

*微生物标准物质的进出口均有特殊要求，国际运费标准将高于其他标准物质。

编号	描述	规格
IRMM-447	单核细胞增生李斯特菌 gDNA	vial
IRMM-448	空肠弯曲杆菌 gDNA (NCTC 11351)	vial
IRMM-449	大肠埃希菌 gDNA	vial
BCR-506	奶粉中肠球菌 (WR63)	10 caps
BCR-507R	奶粉中鼠伤寒沙门氏菌	10 caps
BCR-527	奶粉中阴沟肠杆菌(WR3)	10 caps
BCR-528	奶粉中蜡样芽胞杆菌	10 caps.
BCR-594	奶粉中大肠杆菌	10 caps
BCR-595	奶粉中李斯特菌	10 caps.
IRMM-311	Genomic DNA of <i>Bacillus licheniformis</i> DSM 5749 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)	vial
IRMM-312	Genomic DNA of <i>Bacillus subtilis</i> DSM 5750 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)	vial
IRMM-351	<i>Escherichia coli</i> 0157 in material spheres (Bioball® format)	vial
IRMM-352	<i>Salmonella enteritidis</i> in material spheres (Bioball® format)	vial
IRMM-354	<i>Candida albicans</i> (NCPF 3179) in material spheres (Bioball® format)	vial
IRMM-355	<i>Enterococcus faecalis</i> in material spheres (Bioball® format)	vial

注：以上样品的相关数据请见下面“微生物数据列表”；如需要更详细的信息，请联系我们。

微生物数据列表：

Purified genomic DNA (gDNA)

The stable genomic DNA (gDNA) standards (IRMM-447, 448, 449) have been developed for the verification and detection of food-borne pathogens by diagnostic polymerase chain reaction (PCR) within the European FOOD-PCR project. These standards support harmonisation and validation of different PCR methods by their use as taxonomic controls in PCR reactions.

Code	Product	Unit
IRMM-447	Genomic DNA of <i>Listeria monocytogenes</i> 单核细胞增生李斯特菌gDNA Freeze dried genomic DNA Certified identity: genomic DNA <i>Listeria monocytogenes</i> (strain 4B, NCTC 11994) Indicative value for the mass of genomic DNA per vial Dry ice shipment required	vial
IRMM-448	Genomic DNA <i>Campylobacter jejuni</i> (NCTC 11351) 空肠弯曲杆菌gDNA (NCTC 11351) Indicative value Mass of genomic DNA per vial 71 ng Dry ice shipment required	vial
IRMM-449	Genomic DNA of <i>Escherichia coli</i> 大肠埃希菌gDNA	vial

Freeze dried genomic DNA
 Certified identity: genomic DNA *Escherichia coli* O157, strain
 EDL 933 Indicative value for the mass of genomic DNA per vial
 Dry ice shipment required

Certified materials for microbiological properties

Code	Product	Unit																						
BCR-506	<p><i>Enterococcus faecium</i> (WR63) in milk powder 奶粉中肠球菌 (WR63)</p> <p>BCR-506 consists of 0.26 g milk powder (with a tolerance interval of $\pm 5\%$ m/m), artificially contaminated with <i>Enterococcus faecium</i> (WR63), contained in a gelatin capsule. The entire capsule should be reconstituted according to the instruction for use.</p> <table border="1"> <thead> <tr> <th>Colony forming particles of <i>Enterococcus faecium</i> (WR63) according to the procedure</th> <th colspan="2">Number of colony forming particles (cfp)</th> </tr> <tr> <th></th> <th>Certified value</th> <th>Uncertainty interval</th> </tr> </thead> <tbody> <tr> <td>ISO 7899/2, 1984 KFA</td> <td>76</td> <td>71 - 81</td> </tr> <tr> <td>ISO 7899/2, 1984 m-EA</td> <td>72</td> <td>63 - 82</td> </tr> <tr> <td>ISO 6222, 1988 YA</td> <td>109</td> <td>102 - 117</td> </tr> </tbody> </table> <p>Dry ice shipment required</p>	Colony forming particles of <i>Enterococcus faecium</i> (WR63) according to the procedure	Number of colony forming particles (cfp)			Certified value	Uncertainty interval	ISO 7899/2, 1984 KFA	76	71 - 81	ISO 7899/2, 1984 m-EA	72	63 - 82	ISO 6222, 1988 YA	109	102 - 117	10 caps.							
Colony forming particles of <i>Enterococcus faecium</i> (WR63) according to the procedure	Number of colony forming particles (cfp)																							
	Certified value	Uncertainty interval																						
ISO 7899/2, 1984 KFA	76	71 - 81																						
ISO 7899/2, 1984 m-EA	72	63 - 82																						
ISO 6222, 1988 YA	109	102 - 117																						
BCR-507R	<p><i>Salmonella typhimurium</i> in milk powder 奶粉中鼠伤寒沙门氏菌</p> <p>BCR-507R consists of 0.29 g artificially contaminated spray dried milk contained in a blue/white gelatine capsule. The strain used for the contamination is <i>Salmonella typhimurium</i>.</p> <table border="1"> <thead> <tr> <th>Colony forming particles of <i>Salmonella typhimurium</i> according to the procedure</th> <th colspan="2">Number of colony forming particles (cfp)</th> </tr> <tr> <th></th> <th>Certified value</th> <th>Uncertainty interval</th> </tr> </thead> <tbody> <tr> <td>Enumeration procedure</td> <td>5.0</td> <td>4.5 - 5.4</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Fraction of negative capsules of <i>Salmonella typhimurium</i> according to the procedure</th> <th colspan="2">Fraction of negative capsules</th> </tr> <tr> <th></th> <th>Certified value</th> <th>Uncertainty interval</th> </tr> </thead> <tbody> <tr> <td>Enumeration procedure</td> <td>1.1</td> <td>0 - 2.1</td> </tr> <tr> <td>Presence/absence procedure</td> <td>1.6</td> <td>0 - 2.8</td> </tr> </tbody> </table> <p>Dry ice shipment required</p>	Colony forming particles of <i>Salmonella typhimurium</i> according to the procedure	Number of colony forming particles (cfp)			Certified value	Uncertainty interval	Enumeration procedure	5.0	4.5 - 5.4	Fraction of negative capsules of <i>Salmonella typhimurium</i> according to the procedure	Fraction of negative capsules			Certified value	Uncertainty interval	Enumeration procedure	1.1	0 - 2.1	Presence/absence procedure	1.6	0 - 2.8	10 caps.	
Colony forming particles of <i>Salmonella typhimurium</i> according to the procedure	Number of colony forming particles (cfp)																							
	Certified value	Uncertainty interval																						
Enumeration procedure	5.0	4.5 - 5.4																						
Fraction of negative capsules of <i>Salmonella typhimurium</i> according to the procedure	Fraction of negative capsules																							
	Certified value	Uncertainty interval																						
Enumeration procedure	1.1	0 - 2.1																						
Presence/absence procedure	1.6	0 - 2.8																						
BCR-527	<p><i>Enterobacter cloacae</i> (WR3) in milk powder 奶粉中阴沟肠杆菌(WR3)</p> <p>BCR-527 consists of 0.308 g milk powder, artificially contaminated with <i>Enterobacter cloacae</i> (WR3), contained in a gelatine capsule.</p> <table border="1"> <thead> <tr> <th>Colony forming particles of <i>Enterobacter cloacae</i> (WR3) according to the procedure</th> <th colspan="2">Number of colony forming particles (cfp)</th> </tr> <tr> <th></th> <th>Certified value</th> <th>Uncertainty interval</th> </tr> </thead> <tbody> <tr> <td>ISO 9308-1, 1990 LSA</td> <td>34</td> <td>29 - 40</td> </tr> </tbody> </table> <p>Dry ice shipment required</p>	Colony forming particles of <i>Enterobacter cloacae</i> (WR3) according to the procedure	Number of colony forming particles (cfp)			Certified value	Uncertainty interval	ISO 9308-1, 1990 LSA	34	29 - 40	10 caps.													
Colony forming particles of <i>Enterobacter cloacae</i> (WR3) according to the procedure	Number of colony forming particles (cfp)																							
	Certified value	Uncertainty interval																						
ISO 9308-1, 1990 LSA	34	29 - 40																						
BCR-528	<p><i>Bacillus cereus</i> in milk powder 奶粉中蜡样芽胞杆菌</p> <p>BCR-528 consists of 0.317 g artificially contaminated with spray dried milk contained in an ochre/white gelatine capsule. The strain used for the contamination is <i>Bacillus cereus</i> (ATCC 9139).</p> <table border="1"> <thead> <tr> <th>Colony forming particles of <i>Bacillus cereus</i> according to the procedure</th> <th colspan="2">Number of colony forming particles (cfp)</th> </tr> <tr> <th></th> <th>Certified value</th> <th>Uncertainty interval</th> </tr> </thead> <tbody> <tr> <td>MEYP (ISO 7932) after 24 h incubation</td> <td>53.4</td> <td>51.7 - 55.2</td> </tr> <tr> <td>MEYP (ISO 7932) after 48 h incubation</td> <td>53.7</td> <td>52.1 - 55.4</td> </tr> <tr> <td>PEMBA (L 00.00 - 25) after 24 h incubation</td> <td>55.0</td> <td>52.8 - 57.4</td> </tr> <tr> <td>PEMBA (L 00.00 - 25) after 48 h incubation</td> <td>55.8</td> <td>53.6 - 58.0</td> </tr> </tbody> </table> <p>Indicative value for colony forming particles of <i>Bacillus cereus</i> according to the procedure SBA (Analysis no 67) after 24 h incubation</p> <p>Dry ice shipment required</p>	Colony forming particles of <i>Bacillus cereus</i> according to the procedure	Number of colony forming particles (cfp)			Certified value	Uncertainty interval	MEYP (ISO 7932) after 24 h incubation	53.4	51.7 - 55.2	MEYP (ISO 7932) after 48 h incubation	53.7	52.1 - 55.4	PEMBA (L 00.00 - 25) after 24 h incubation	55.0	52.8 - 57.4	PEMBA (L 00.00 - 25) after 48 h incubation	55.8	53.6 - 58.0	10 caps.				
Colony forming particles of <i>Bacillus cereus</i> according to the procedure	Number of colony forming particles (cfp)																							
	Certified value	Uncertainty interval																						
MEYP (ISO 7932) after 24 h incubation	53.4	51.7 - 55.2																						
MEYP (ISO 7932) after 48 h incubation	53.7	52.1 - 55.4																						
PEMBA (L 00.00 - 25) after 24 h incubation	55.0	52.8 - 57.4																						
PEMBA (L 00.00 - 25) after 48 h incubation	55.8	53.6 - 58.0																						
BCR-594	<p><i>Escherichia coli</i> in milk powder 奶粉中大肠杆菌</p> <p>BCR-594 consists of 0.28 g milk powder (with a mass tolerance of $\pm 5\%$), artificially contaminated with <i>Escherichia coli</i> (WR1), contained in a gelatine capsule.</p> <p>Number of colony forming particles (z) of <i>Escherichia coli</i> (WR1) in 1 mL of suspension of reconstituted artificially contaminated milk powder.</p> <table border="1"> <thead> <tr> <th rowspan="2">Colony forming particles of <i>Escherichia coli</i> according to the procedure</th> <th rowspan="2">Certified value</th> <th colspan="2">Uncertainty</th> </tr> <tr> <th>Relevant below the certified value</th> <th>Relevant above the certified value</th> </tr> </thead> <tbody> <tr> <td>ISO 9308-1, 1990 T7A 30/37</td> <td>56</td> <td>8</td> <td>10</td> </tr> <tr> <td>ISO 9308-1, 1990 T7A 30/44</td> <td>49</td> <td>8</td> <td>10</td> </tr> <tr> <td>ISO 9380-1, 1990 LSA 30/37</td> <td>40</td> <td>7</td> <td>8</td> </tr> <tr> <td>ISO 9308-1, 1990 LSA 30/44</td> <td>36</td> <td>7</td> <td>8</td> </tr> </tbody> </table> <p>Dry ice shipment required</p>	Colony forming particles of <i>Escherichia coli</i> according to the procedure	Certified value	Uncertainty		Relevant below the certified value	Relevant above the certified value	ISO 9308-1, 1990 T7A 30/37	56	8	10	ISO 9308-1, 1990 T7A 30/44	49	8	10	ISO 9380-1, 1990 LSA 30/37	40	7	8	ISO 9308-1, 1990 LSA 30/44	36	7	8	10 caps.
Colony forming particles of <i>Escherichia coli</i> according to the procedure	Certified value			Uncertainty																				
		Relevant below the certified value	Relevant above the certified value																					
ISO 9308-1, 1990 T7A 30/37	56	8	10																					
ISO 9308-1, 1990 T7A 30/44	49	8	10																					
ISO 9380-1, 1990 LSA 30/37	40	7	8																					
ISO 9308-1, 1990 LSA 30/44	36	7	8																					

BCR-595	<p><i>Listeria monocytogenes</i> in milk powder 奶粉中李斯特菌</p> <p>BCR-595 consists of 0.34 g artificially contaminated spray dried milk contained in an orange/white gelatine capsule. The strain used for the contamination is <i>Listeria monocytogenes</i> (Scott A strain).</p> <table border="1"> <thead> <tr> <th>Colony forming particles of <i>Listeria monocytogenes</i> according to the procedure</th> <th colspan="2">Number of colony forming particles (cfp)</th> </tr> <tr> <th></th> <th>Certified value [cfp/capsule]</th> <th>Uncertainty interval [cfp/capsule]</th> </tr> </thead> <tbody> <tr> <td>Enumeration procedure</td> <td>7.2</td> <td>6.8 - 7.6</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Fraction of negative capsules of <i>Listeria monocytogenes</i> according to the procedure</th> <th colspan="2">Fraction of negative capsules</th> </tr> <tr> <th></th> <th>Certified value [%]</th> <th>Uncertainty interval [%]</th> </tr> </thead> <tbody> <tr> <td>Enumeration procedure</td> <td>0.075</td> <td>0.05 - 0.112</td> </tr> <tr> <td>Presence/absence procedure according to IDF standard 143</td> <td>1.2</td> <td>0 - 2.3</td> </tr> </tbody> </table> <p>Dry ice shipment required</p>	Colony forming particles of <i>Listeria monocytogenes</i> according to the procedure	Number of colony forming particles (cfp)			Certified value [cfp/capsule]	Uncertainty interval [cfp/capsule]	Enumeration procedure	7.2	6.8 - 7.6	Fraction of negative capsules of <i>Listeria monocytogenes</i> according to the procedure	Fraction of negative capsules			Certified value [%]	Uncertainty interval [%]	Enumeration procedure	0.075	0.05 - 0.112	Presence/absence procedure according to IDF standard 143	1.2	0 - 2.3	10 caps.														
Colony forming particles of <i>Listeria monocytogenes</i> according to the procedure	Number of colony forming particles (cfp)																																				
	Certified value [cfp/capsule]	Uncertainty interval [cfp/capsule]																																			
Enumeration procedure	7.2	6.8 - 7.6																																			
Fraction of negative capsules of <i>Listeria monocytogenes</i> according to the procedure	Fraction of negative capsules																																				
	Certified value [%]	Uncertainty interval [%]																																			
Enumeration procedure	0.075	0.05 - 0.112																																			
Presence/absence procedure according to IDF standard 143	1.2	0 - 2.3																																			
Code	Product	Unit																																			
IRMM-311	<p>Genomic DNA of <i>Bacillus licheniformis</i> DSM 5749 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)</p> <p>The intended use of this material is the taxonomic identification of the authorised probiotic feed additive <i>Bacillus licheniformis</i> DSM 5749 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of <i>Bacillus licheniformis</i> DSM 5749. Certified values and uncertainties are provided for Sfil digested DNA fragments in the size interval 50 kb - 90 kb and requires the use of a specified analytical procedure</p> <table border="1"> <thead> <tr> <th rowspan="2">Sfil digested DNA fragments in the Band no size interval 50 kb – 90 kb</th> <th colspan="2">Fragment length</th> </tr> <tr> <th>Certified value [kb]</th> <th>Uncertainty [kb]</th> </tr> </thead> <tbody> <tr><td>1</td><td>89.6</td><td>4.7</td></tr> <tr><td>2</td><td>80.9</td><td>2.5</td></tr> <tr><td>3</td><td>75.3</td><td>2.7</td></tr> <tr><td>4</td><td>72.2</td><td>3.5</td></tr> <tr><td>5</td><td>66.9</td><td>1.9</td></tr> <tr><td>6</td><td>64.6</td><td>2.9</td></tr> <tr><td>7</td><td>60.3</td><td>1.3</td></tr> <tr><td>8</td><td>56.5</td><td>1.3</td></tr> <tr><td>9</td><td>53.9</td><td>1.3</td></tr> <tr><td>10</td><td>50.6</td><td>1.3</td></tr> </tbody> </table>	Sfil digested DNA fragments in the Band no size interval 50 kb – 90 kb	Fragment length		Certified value [kb]	Uncertainty [kb]	1	89.6	4.7	2	80.9	2.5	3	75.3	2.7	4	72.2	3.5	5	66.9	1.9	6	64.6	2.9	7	60.3	1.3	8	56.5	1.3	9	53.9	1.3	10	50.6	1.3	vial
Sfil digested DNA fragments in the Band no size interval 50 kb – 90 kb	Fragment length																																				
	Certified value [kb]	Uncertainty [kb]																																			
1	89.6	4.7																																			
2	80.9	2.5																																			
3	75.3	2.7																																			
4	72.2	3.5																																			
5	66.9	1.9																																			
6	64.6	2.9																																			
7	60.3	1.3																																			
8	56.5	1.3																																			
9	53.9	1.3																																			
10	50.6	1.3																																			
IRMM-312	<p>Genomic DNA of <i>Bacillus subtilis</i> DSM 5750 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)</p> <p>The intended use of this material is the taxonomic identification of the authorised probiotic feed additive <i>Bacillus subtilis</i> DSM 5750 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of <i>Bacillus subtilis</i> DSM 5750. Certified values and uncertainties are provided for Sfil digested DNA fragments in the size interval 15 kb - 97 kb and requires the use of a specified analytical procedure.</p> <table border="1"> <thead> <tr> <th rowspan="2">Sfil digested DNA fragments in the Band no size interval 15 kb – 97 kb</th> <th colspan="2">Fragment length</th> </tr> <tr> <th>Certified value [kb]</th> <th>Uncertainty [kb]</th> </tr> </thead> <tbody> <tr><td>1</td><td>89.2</td><td>0.9</td></tr> <tr><td>2</td><td>81.4</td><td>0.8</td></tr> <tr><td>3</td><td>77.7</td><td>0.6</td></tr> <tr><td>4</td><td>62.5</td><td>1.8</td></tr> <tr><td>5</td><td>59.5</td><td>2.1</td></tr> <tr><td>6</td><td>44.0</td><td>2.4</td></tr> <tr><td>7</td><td>29.2</td><td>2.0</td></tr> <tr><td>8</td><td>23.6</td><td>1.3</td></tr> <tr><td>9</td><td>18.6</td><td>1.3</td></tr> </tbody> </table>	Sfil digested DNA fragments in the Band no size interval 15 kb – 97 kb	Fragment length		Certified value [kb]	Uncertainty [kb]	1	89.2	0.9	2	81.4	0.8	3	77.7	0.6	4	62.5	1.8	5	59.5	2.1	6	44.0	2.4	7	29.2	2.0	8	23.6	1.3	9	18.6	1.3	vial			
Sfil digested DNA fragments in the Band no size interval 15 kb – 97 kb	Fragment length																																				
	Certified value [kb]	Uncertainty [kb]																																			
1	89.2	0.9																																			
2	81.4	0.8																																			
3	77.7	0.6																																			
4	62.5	1.8																																			
5	59.5	2.1																																			
6	44.0	2.4																																			
7	29.2	2.0																																			
8	23.6	1.3																																			
9	18.6	1.3																																			
IRMM-351	<p><i>Escherichia coli</i> O157 in material spheres (Biobal[®] format)</p> <p>Each vial contains one material sphere of <i>Escherichia coli</i> O157 (NCTC 12900).</p> <p>Certified values</p> <table border="1"> <tbody> <tr> <td>cfu per material sphere on nutrient agar ...</td> <td>4 ± 2 cfu</td> </tr> <tr> <td>cfu per material sphere on enterohemolysin agar ...</td> <td>5 ± 2 cfu</td> </tr> </tbody> </table> <p>Recommendation: For application in presence/absence tests, analyse at least two vials of the CRM.</p> <p>Dry ice shipment required</p> <p>BioBall[®] - Trademark of BIOMERIEUX INDUSTRY</p>	cfu per material sphere on nutrient agar ...	4 ± 2 cfu	cfu per material sphere on enterohemolysin agar ...	5 ± 2 cfu	vial																															
cfu per material sphere on nutrient agar ...	4 ± 2 cfu																																				
cfu per material sphere on enterohemolysin agar ...	5 ± 2 cfu																																				
IRMM-352	<p><i>Salmonella enteritidis</i> in material spheres (Biobal[®] format)</p> <p>Each vial contains one material sphere of <i>Salmonella enteritidis</i> (NCTC 12694).</p> <p>Certified values</p>	vial																																			

cfu per material sphere on nutrient agar ... 5 ± 2 cfu
 cfu per material sphere on xylose lysine deoxycholate agar ... 5 ± 2 cfu
 Recommendation: For application in presence/absence tests, analyse at least two vials of the CRM.
 Dry ice shipment required

BioBall® - Trademark of BIOMERIEUX INDUSTRY

IRMM-354

Candida albicans (NCPF 3179) in material spheres (Bioball® format)

vial

Each vial contains one material sphere of *Candida albicans* (NCPF 3179).

IRMM-354 is intended to be used for the measurement of *Candida albicans* by colony counting on nutrient agar or OGYE agar according to ISO 7218 and ISO 13681 respectively.

	Number of colony forming units (cfu)	
	Certified value [cfu]	Uncertainty [cfu]
cfu per material sphere on ¹⁾ nutrient agar (NA)	917	168
cfu per material sphere on Oxytetracyclin-Glucose-YeastExtract agar (OGYE) ²⁾	912	173

1) as defined by the procedure according to ISO 7218 [1]

2) as defined by the procedure according to ISO 13681 [2]

BioBall® - Trademark of BIOMERIEUX INDUSTRY

IRMM-355

Enterococcus faecalis in material spheres (Bioball® format)

vial

Each vial contains one material sphere of *Enterococcus faecalis* (CIP 106877).

This CRM is intended to be used for the measurement of *Enterococcus faecalis* by colony counting on horse blood agar or Slanetz and Bartley agar according to ISO 7218 [1] and ISO 7899-2 [2] respectively.

	Number of colony forming units (cfu)	
	Certified value [cfu]	Uncertainty [cfu]
cfu per material sphere on horse blood agar ¹⁾	917	168
cfu per material sphere on Slanetz and Bartley agar ²⁾	912	173

1) as defined by the procedure according to ISO 7218 [1]

2) as defined by the procedure according to ISO 13681 [2]

BioBall® - Trademark of BIOMERIEUX INDUSTRY