

Certified Reference Material Data

This certificate is designed in accordance with ISO Guide 31:2015

Batch Number: **B338**

General

| | |
|------------------------------|--|
| Safety: | This product is non-hazardous. |
| Storage: | 2-8°C. Do not freeze. |
| Catalogue Number: | CSCG100, CS2CG100, CS4CG100, CSCG500 CS50CG100, JPN-CSCG100, JPN-CS4CG100 |
| Production Date: | 28 June 2023 |
| Expiration Date: | 8 November 2023 |
| Volume: | 0.917 ml +/- 6 ul |
| Suspension media: | Buffered saline solution. |
| Sterilisation method: | Gamma Irradiation. |

Counts

(Method Ref: CG-014)

| | Mean (i) | St.Dev.(ii) | Expanded Uncertainty(iii) |
|-------------------------------|------------|-------------|---------------------------|
| Cryptosporidium count: | 100 | 2.2 | 5.0 |
| Giardia count: | 99 | 1.9 | 4.2 |
| DAPI staining: | | | |
| Cryptosporidium % +ve | 100 | % | |
| Giardia % +ve | 100 | % | |

The Mean CFU quantification (i) and associated SD (ii) are traceable to counts using flow cytometry

Stock specifics*

| | |
|-----------------------------|---|
| Organism: | <i>Cryptosporidium parvum</i> |
| Strain: | Iowa |
| Source: | Bovine |
| Shed date: | 07 June 2023 |
| Purification method: | Discontinuous sucrose and cesium chloride centrifugation gradients. |

Stock specifics*

| | |
|-----------------------------|---|
| Organism: | <i>Giardia lamblia</i> |
| Strain: | H3 |
| Source: | Gerbil |
| Shed date: | 02 June 2023 |
| Purification method: | Sucrose and Percoll density gradient centrifugation |

Certified Values and Uncertainties

Enumeration Method

A) CG-014

The count values have been obtained by taking a randomised significant sample of each batch and enumerating cysts and oocysts by flow cytometric analysis.

B) Stability Ref: Exp #1421

Stability testing has been conducted on batch CS-CG100-38 of ColorSeed™ at 5 months and 5 days.

ColorSeed™ with an assigned property value in terms of its known count value is used as a quality control reference material. This CRM has been produced by flow cytometry and is traceable to natural numbers.

i) The certified value represents the unweighted mean counts from a statistically relevant number of samples covering the entire product batch.

The characterization uncertainty μ (characterization) represents the dispersion of measurement values, calculated as standard deviation.

ii) The Standard Deviation is a measure of variability within the batch.

iii) Combined standard uncertainty, μ (CRM), is calculated as the square root of the sum of squares of the individual contributions (characterization, homogeneity, stability), according to:

$$\mu(\text{CRM}) = \sqrt{\mu^2_{\text{char}} + \mu^2_{\text{homogeneity}} + \mu^2_{\text{stability}}}$$

The Expanded Uncertainty, U(CRM) is reported at the 95% Confidence Level with a coverage factor k=2: U(CRM) = μ (CRM) * k.

* Organism identification is not certified.



Accredited for compliance with ISO 17034
Accredited Reference Material Producer

NATA is a signatory to the ILAC Mutual Recognition Arrangement
for the mutual recognition of the equivalence of reference materials certificates

Accreditation No: 20685
Site No: 24813

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Storage and Handling:

Store ColorSeed™ at 2-8°C.

Description:

ColorSeed™ contains precise known counts of non viable *Cryptosporidium* and *Giardia* labelled with a red fluorescent dye in 1.2ml of clear liquid.

Intended Use:

ColorSeed™ is a biological certified reference material containing a precise number of non-viable *Cryptosporidium* and *Giardia*. It is designed for use as an internal quantitative quality control sample.

Instructions for Use (refer to the corresponding Product Insert for more details)

Seeding the sample (use one tube of ColorSeed™)

1. Remove and keep the tube cap
2. Add 2 mL of 0.05% (v/v) Tween 20 to the tube
3. Replace cap and vortex for 20 seconds
4. Remove and keep cap and pour tube contents into sample
5. Add 3 mL of reagent grade water to the empty tube
6. Replace cap and vortex for 20 seconds
7. Remove and keep cap and pour tube contents into sample
8. Repeat steps 5, 6 and 7 once more

Sample Analysis

9. Analyze the sample as per the laboratory Standard Operating Procedure.
10. Record the number of red fluorescent *Cryptosporidium* and *Giardia* detected.
11. Separately record the number of green-only fluorescent *Cryptosporidium* and *Giardia* detected.
12. Calculate the ColorSeed™ *Cryptosporidium* and *Giardia* recovery using the following formulae:-

Cryptosporidium Recovery (%) =
$$\frac{\text{red } \textit{Cryptosporidium} \text{ detected} \times 100}{\text{number of } \textit{Cryptosporidium} \text{ in ColorSeed}^{\text{TM}} \text{ as per C of A}}$$

Giardia Recovery (%) =
$$\frac{\text{red } \textit{Giardia} \text{ detected} \times 100}{\text{number of } \textit{Giardia} \text{ in ColorSeed}^{\text{TM}} \text{ as per C of A}}$$

* Certificate of Analysis

13. Calculate the number of naturally occurring *Cryptosporidium* and *Giardia* in the original sample using the following formulae:-

Cryptosporidium =
$$\frac{\text{green-only } \textit{Cryptosporidium} \text{ detected}}{\text{Colorseed}^{\text{TM}} \textit{Cryptosporidium} \text{ recovery (from step 12)}}$$

Giardia =
$$\frac{\text{green-only } \textit{Giardia} \text{ detected}}{\text{Colorseed}^{\text{TM}} \textit{Giardia} \text{ recovery (from step 12)}}$$

Safety information:

ColorSeed™ is not classed as a Dangerous Good or hazardous material. It has been gamma irradiated and the *Cryptosporidium* and *Giardia* are non viable.

Please refer to the Safety Data Sheet (available online www.biopoint.com.au)

References:

- [1] ISO Guide 30 Reference materials - Selected terms and definitions
- [2] ISO Guide 31 Reference materials - Contents of certificates labels and accompanying documentation
- [3] ISO17034 General requirements for the Competence of Reference material Producers
- [4] ISO Guide 35 Reference materials - Guidance for characterisation and assessment of homogeneity and stability
- [5] AS ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories

Approved Quality Signatory:

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