



CANADA'S MICHAEL SMITH
GENOME SCIENCES CENTRE

From Nobel roots.

CGL CLINICAL



USER GUIDE

v1.0.0 · 18 June 2026



CANADA'S MICHAEL SMITH
GENOME SCIENCES CENTRE

ABOUT US

Our **CAP**, **DAP**, **ISO 15189**, and **ISO 27001** certified technology platform is a high-throughput, large-scale DNA and RNA sequencing and analysis facility that has been designed to maximize analytical capacity, diversity, efficiency, scalability and flexibility.

Our state-of-the-art clinical, sequencing, bioinformatics, and proteomics platforms are ready to be put to use for your research or clinic.

We partner with researchers, guide experimental design, execute high quality processing of complex and valuable biological samples and provide extensive bioinformatics analyses with the aim of making genomics research accessible to our partners and collaborators within the scientific community.

Please feel free to contact us at SOW@bcgsc.ca if you have any questions about the services we provide.

ABOUT THIS GUIDE

This user guide describes requirements and recommendations for the preparation and submission of **clinical samples** from the **BC Cancer Genetics and Genomics Laboratory (CGL)**, a DAP-accredited laboratory.

If you are submitting a different sample type, please refer to the other user guides at bcgsc.ca/services.

CONTACTS

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1. ONLINE SAMPLE SUBMISSION

Refer to [Introduction to Our Collaborative Services guide](#) for instructions on using the [Online Sample Submission System](#). We recommend that you fully review this guide to working with us before initiating your submission.

The online sample submission form must be completed and approved prior to submitting your samples to the GSC.

If you have any questions, contact us at GSC_Submissions@bcgsc.ca.

1.1. SUBMISSION DETAILS ASPECIFIC TO CLINICAL SAMPLES

When you are entering information about your sample in our [Online Sample Submission](#) system, please pay particular attention to the following sections. Wrong or missing information in these columns will delay your submission.

1. *Batch Identifier:* [Batch ID](#) for clinical capture should be in [CGL_YYYY_###](#) format and for WGS it should be in [CGL_WGS_YYYY_###](#) format.
 - 1.1. [YYYY](#) is the year and [###](#) is incremental submission number for that year.
 - 1.2. Clinical and non-clinical (e.g. research or validation) samples that are being dropped off on the same day can have identical [Batch ID](#).
2. A separate sample submission form must be submitted for the samples whose [Clinical Test Purpose](#) is not [Clinical](#) such as research or validation samples. This allows us to process [Clinical](#) samples without delay if there are any problems with [Non-clinical](#) samples.
 - 2.1. Clinical and non-clinical samples that are being dropped off on the same day can share identical [Batch ID](#). Separate submission must also be submitted for [clinical capture](#) and [clinical WGS-HCP](#) samples.
 - 2.2. All the fields in the [Sample Information](#) section will be pre-populated based on the entries in your Excel file. Refer to [Appendix A](#) in this guide for detailed about how the sample information form is pre-populated and the mapping logic.
3. Use the [Notes](#) field to include information such as
 - 3.1. Mutations for positive controls.
 - 3.2. Samples whose amount is less than 100 ng.
 - 3.3. Non-standard submission samples.



2. APPENDIX A

In order to support the transition from [CGL Excel submissions](#) to our [Online Sample Submission](#) system, we automatically rename certain column names and remap cell values in the Excel submission to new column names and values that are compatible with the [Online Sample Submission](#) system.

2.1. OVERVIEW OF THE RENAMING AND REMAPPING PROCESS

1. We rename some column names in the Excel file to match column names as they appear in the Online Sample Submission system. About half of the columns have new names and remaining columns remain unchanged (see [Renamed Columns](#) section).
2. We remove any of the columns that are no longer used (see [Removed Columns](#) section).
3. We convert some cell values to match the options in the drop-down menus of the [Online Sample Submission System](#). Any value that does not have a remapping is left unchanged (see [Renamed Values](#) section).



2.2. RENAMED COLUMNS

The following columns will be renamed. If you use the [Prepopulate the form by uploading an Excel file](#) feature in the Online Submission System, this renaming will be done automatically.

Column Name		Notes
Excel File	Online Submission System	
Patient Identifier	Patient ID	
Sample Type	Nature of Analyte	
Volume in μL	Volume (μL)	
Concentration in $\text{ng}/\mu\text{L}$	Concentration ($\text{ng}/\mu\text{L}$)	
Submitted Concentration Measured By	Quantification Method	
Test Purpose	Clinical Test Purpose	
Normal/Diseased Sample	Tissue Disease Status	
Pathology & Pathology Risk Group	Pathology	We combine these two columns and have separate records to distinguish risk groups.
Pathology Type	Tissue Type	
Funding Source	Funding	
CCG Batch ID	—	The mapper expects one CCG Batch ID per submission.
		It is saved as a setting, rather than as a column value.



2.3. REMOVED COLUMNS

These columns are no longer required and are ignored.

Column Name		Notes
Excel File	Online Submission System	
Goals	—	We determine this based on the submission type.
Goal Target	—	
Work Request Type	—	
Goal Target Type	—	
Work Request Notes	—	
Project	—	We determine this from SOW settings.
Contact	—	
Sample Origin Type	—	We no longer require this information.
DNAse Treatment Method	—	
RIN of RNA	—	



2.4. RENAMED VALUES

Some of the field values in our Online Submission System no longer match those used in the legacy Excel file submissions.

For each column affected, this section covers all the cell values that will be remapped.

If your cell value does not match any of these renaming schemes, it will remain unchanged.

When this happens, the Online Submission System may require you to address a validation error during the submission process.

2.4.1. PATHOLOGY

Excel File	Online Submission System	
Column name		
Pathology	Pathology	Notes
Field Value		
Ovarian Cancer	Ovarian Cancer	
Large Intestine Tumor - Gastrointestinal Stromal Tumor (GIST)	Gastro-Intestinal Stromal Tumour	
Unspecified Tissue Melanoma	Melanoma	
Lung Carcinoma - NonSmall Cell	Lung Carcinoma - Non Small Cell	We have seen a few variations on the placement of hyphens and spaces. We tried to map them all to this value.
Lung Carcinoma - Squamous Cell	Lung Squamous Carcinoma	
Unspecified Tissue Glioma	Low Grade Glioma	
Large Intestine-Colon Carcinoma	Colon Carcinoma	
Blood Neoplasm - Myeloproliferative	Myeloproliferative neoplasm	
Blood Neoplasm - Myeloproliferative, with Jak2-negative risk group	Myeloproliferative Neoplasm - Jak2negative	
Blood Myelodysplastic Syndromes	Myelodysplastic Syndrome	



Blood Leukemia - Acute Myeloid	AcuteMyeloid Leukemia	We ignore the risk group.
Prostate Cancer	Prostate Cancer	
Breast Cancer	Breast Cancer	
Unknown Tissue Unknown Histology	—	We don't map this to any value. The Pathology field will be disabled for controls
Unspecified Tissue Myeloid	—	We don't map this to any value. The Pathology field will be disabled for controls.

2.4.2. SAMPLE TYPE (NATURE OF ANALYTE)

The [Sample Type](#) column will be renamed to [Nature of Analyte](#).

Excel File	Online Submission System	
Column name		Notes
Sample Type	Nature of Analyte	
Field Value		
Nucleic_Acid- DNA-Genomic	Genomic DNA	
Nucleic_Acid- DNA-Genomic-FFPE DNA	FFPE DNA	
Nucleic_Acid- DNA-Genomic-MAA DNA	MAA DNA	
Nucleic_Acid- DNA-Cell Free DNA	Cell Free DNA	

In addition to the values listed in the table above, the [Nature of Analyte](#) column has several additional options:

1. [RNA](#)
2. [FFPE RNA](#)
3. [TNA](#)
4. [FFPE TNA](#)

If you wish to submit any of these sample types (e.g. [FFPE RNA](#)), enter this value in the Excel file and it will be automatically processed by the Online Submission System during the “[Prepopulate the form by uploading an Excel file](#)” feature.



2.4.3. NORMAL/DISEASED SAMPLE (TISSUE DISEASE STATUS)

The **Normal/Diseased Sample** column will be renamed to **Tissue Disease Status**.

Excel File	Online Submission System	
Column name		Notes
Normal/Diseased Sample	Tissue Disease Status	
Field Value		
Normal	Normal	
Diseased	Diseased – Tumor	We assume the disease corresponds to a tumor.

Every instance of **Diseased** is automatically remapped to “**Diseased – Tumour**”.

If this is not appropriate for your sample, you can instead use “**Diseased – Other**”. Doing so will have minimal impact on the submission and processing of your sample. Choosing “**Diseased – Other**” will allow you to omit the **Tissue Type** field, if it is not applicable.

2.4.4. TEST PURPOSE (CLINICAL TEST PURPOSE)

Excel File	Online Submission System	
Column name		Notes
Test Purpose	Clinical Test Purpose	
Field Value		
Oncopanel	Oncopanel DNA	
Myeloid	Myeloid DNA	
Prostate	Prostate	

In addition to the values listed in the table above, the **Clinical Test Purpose** column has several additional options:

1. **HCP**
2. **Myeloid Both**
3. **Myeloid DNA**
4. **Myeloid RNA**
5. **Oncopanel Both**
6. **Oncopanel DNA**
7. **Oncopanel RNA**
8. **Prostate**
9. **WGS-HCP**

If your submission is associated with any of these options (e.g. **HCP**), enter this value in the Excel file and it will be automatically processed by the Online Submission System during the “**Prepopulate the form by uploading an Excel file**” feature.



2.4.5. ISOLATION METHOD

Excel File		Online Submission System	Notes
Column name			
Isolation Method	Isolation Method		
Field Value			
Autogen	Autogen		
Gentra Manual	Gentra		
Gentra Paraffin	Gentra		
RSC BM-BuffyCoat DNA	Maxwell		
RSC Buffy Coat DNA	Maxwell		
RSC LV ccfDNA	Maxwell		
RSC FFPE DNA	Maxwell		
RSC FFPE TNA	Maxwell		
Maxwell FFPE TNA	Maxwell		

The [GSC Clinical Services](#) pipeline does not require details about the isolation method (e.g., RSC FFPE DNA vs RSC FFPE TNA). It is sufficient to specify one of: [Autogen](#), [Gentra](#), or [Maxwell](#).

2.4.6. OTHER RENAMING SCHEMES

1. We will remove the [External-](#) prefix in either the [Submitted Concentration Measured By](#) or [Quantification Method](#) column.
2. We remove the [\[Received\]](#) after the funding name in the [Funding Source](#) or [Funding](#) columns (e.g., [GSC-1771 \[Received\]](#) becomes simply [GSC1771](#)).



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