GMG Online Sample Submission Portal SOP

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Purpose

This SOP describes the structure, organization, performance and how to operate the online GMG Online Sample Submission Portal (Data Laboratory Information System specifically programmed for GMG). The GMG Online Sample Submission Portal LIMS (GMGOSSP) is the interface for clients to enter their account details and submit samples both for research and clinical diagnostic.

Scope

This SOP describes all steps involved that clients have to complete to register an account and submit samples via manifests to GMG services. The progression of manifests, data upload and release of results in the GMG Sample Management Software is described in the SOP called GMG Sample Management Software SOP (see References GMG Sample Management Software SOP, document QS_11).

Responsibilities

Role	Responsibilities
Laboratory Director	• Troubleshooting major problems in processes, instrument breakdowns or client communication • Designing of processes and overseeing procedural conformity
Principal Scientist	• Advises on scientific background and implications and regulatory statutes for Clinical Interpretation
Quality Manager	• Assists in resolving non-conformities. • Ensures processes are followed • Ensures quality requirements are met and maintained

Service Coordinator	• Ensures all information required for laboratory processing is available • Notify clients if sample submissions through the online portal are incomplete or lack information necessary to process samples • Notify clients if sample submissions through the online portal are incomplete or lack information necessary to process samples

Terms and Abbreviations

Term	Explanation
GMG	Garvan Molecular Genetics
GMGOSSP	GMG Online Sample Submission Portal
GMGSMS	GMG Sample Management Software

Procedure

Create Account Procedure

Navigate to our Sample Submission Portal which is located on the Garvan Institute server and has the address https://gmg-submit.gimr.garvan.org.au/#/login.

Once landed on the webpage the screen shown in Figure 1 is displayed. Clients can either login or create a new account by clicking on the button called “Create Account”.

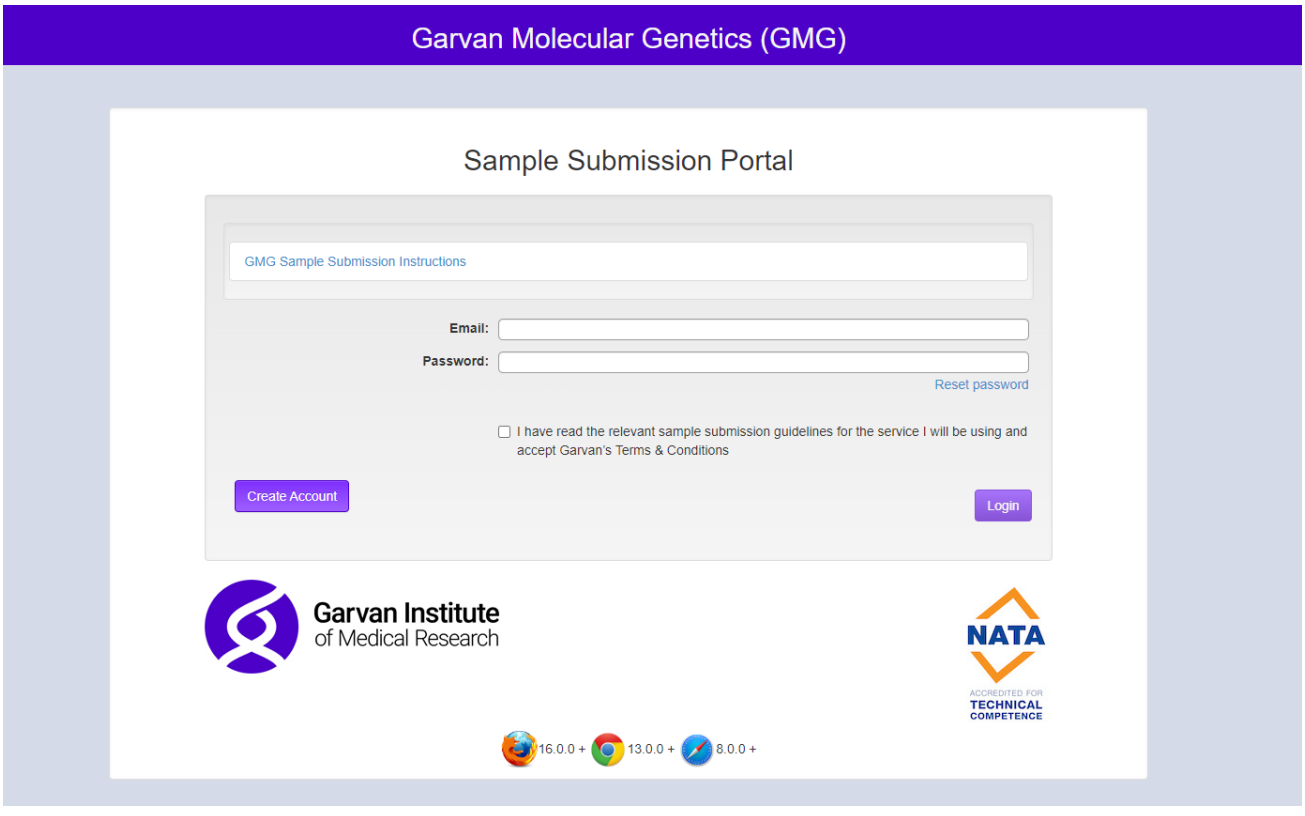


Figure 1: GMG Online Sample Submission Portal landing page

Once the button called “Create Account” is clicked a new popup window will appear and all information for the new account that is to be created is collected, see Figure 2.

In the Box called “Register” under Account Details there are two fields called “Client Details” and “Billing Details”. If the details for “Client details” are filled in the button called “Same as Client Details” can be clicked to transfer the data from the client details field to the billing details field.

Click on the button called “Create Account”. Once this button is clicked a new popup window will appear and all information for the new account that is to be created must be entered, see Figure 2.

In the Box called “Register” under Account Details there are two fields called “Client Details” and “Billing Details”.

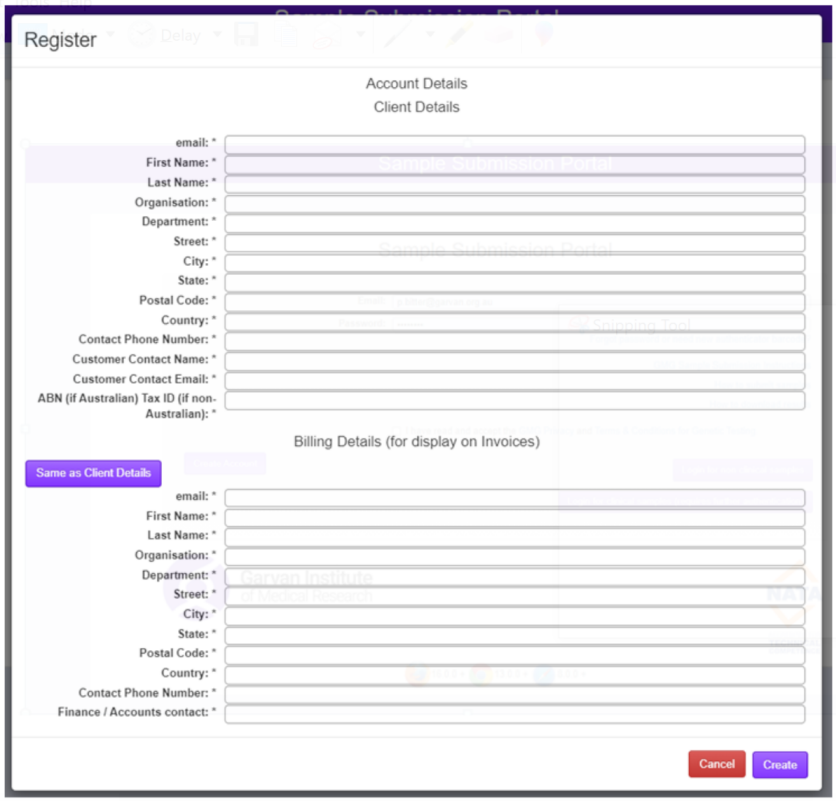


Figure 2: Registering new client page (“Create Account”)

Client Details field

- In the field called “email”* the client needs to enter his/her email address

- In the field called “First Name”* the client needs to enter his/her first name

- In the field called “Last Name”* the client needs to enter his/her last name

- In the field called “Organisation”* the client needs to enter the institute or organisation he/ she works with

- In the field called “Department”* the client needs to enter the supervisor's name or another representative to whom invoices can be addressed

- In the field called “Street”* the client needs to enter the physical address where the organisation or institute is located

- In the field called “City”* the client needs to enter the city in which the organisation or institute is located

- In the field called “State”* the client needs to enter the state in which the organisation or institute is located

- In the field called “Postal Code”* the client needs to enter the postcode for the organisation or institute

- In the field called “Country”* the client needs to enter the Country in which the organisation or institute is located

- In the field called “Contact Phone Number”* the client needs to enter the client’s contact phone number.

- In the field called “Customer Contact Name”* the client needs to enter the client’s contact name.

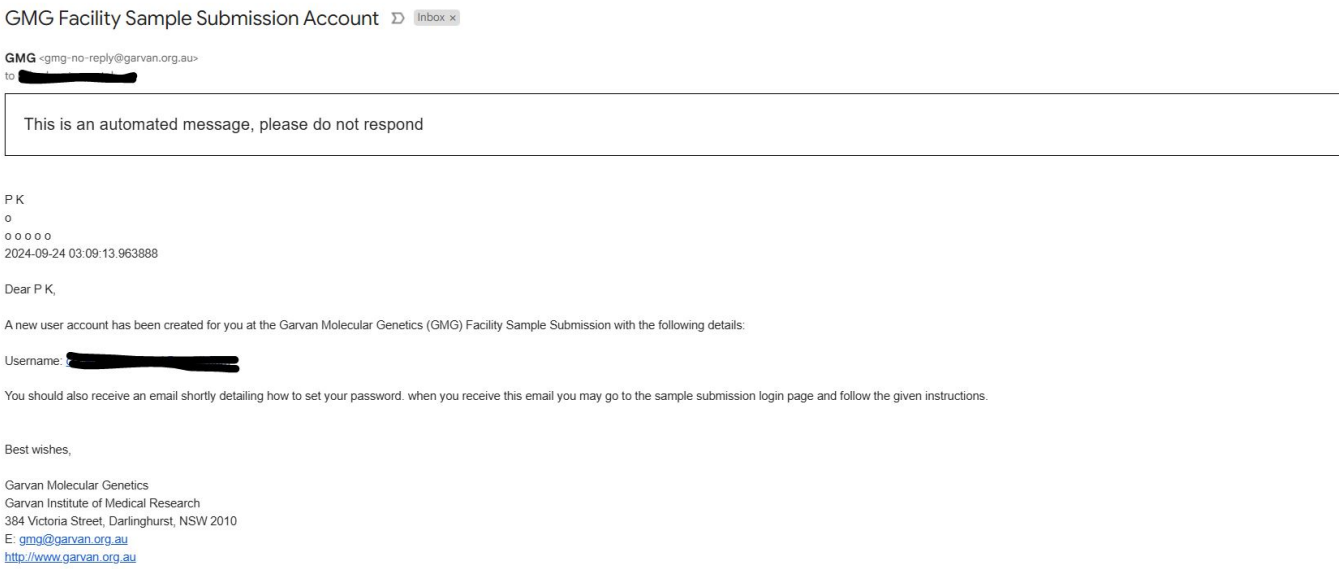
- In the field called “Customer Contact Email”* the client needs to enter the client’s contact email.

- In the field called “ABN (if Australian) TAX ID if non-Australian”* the client needs to enter the business's ABN number

Once all fields marked with a star (*) have been entered and either the billing information is entered too or the “Same as Client details” button was clicked the button called “Create” needs to be clicked so the information is saved and the popup window is closed and disappears.

Confirmation email

The software will then send a confirmation email see, Figure 3.


GMG Facility Sample Submission Account Inbox ×

GMG <gmg-no-reply@garvan.org.au>
to [redacted]

This is an automated message, please do not respond

P K
o
o o o o o
2024-09-24 03:09:13.963888

Dear P K,

A new user account has been created for you at the Garvan Molecular Genetics (GMG) Facility Sample Submission with the following details:

Username: [redacted]

You should also receive an email shortly detailing how to set your password. when you receive this email you may go to the sample submission login page and follow the given instructions.

Best wishes,

Garvan Molecular Genetics
Garvan Institute of Medical Research
384 Victoria Street, Darlinghurst, NSW 2010
E: gmg@garvan.org.au
http://www.garvan.org.au

Figure 3: Example of account validation email sent by the software

Password setting link email

Then the software will send an email to reset the password (which hasnt been set, please use the link in this email to set a password, see Figure 4 for an example. This email contains a link to validate the account and email address.

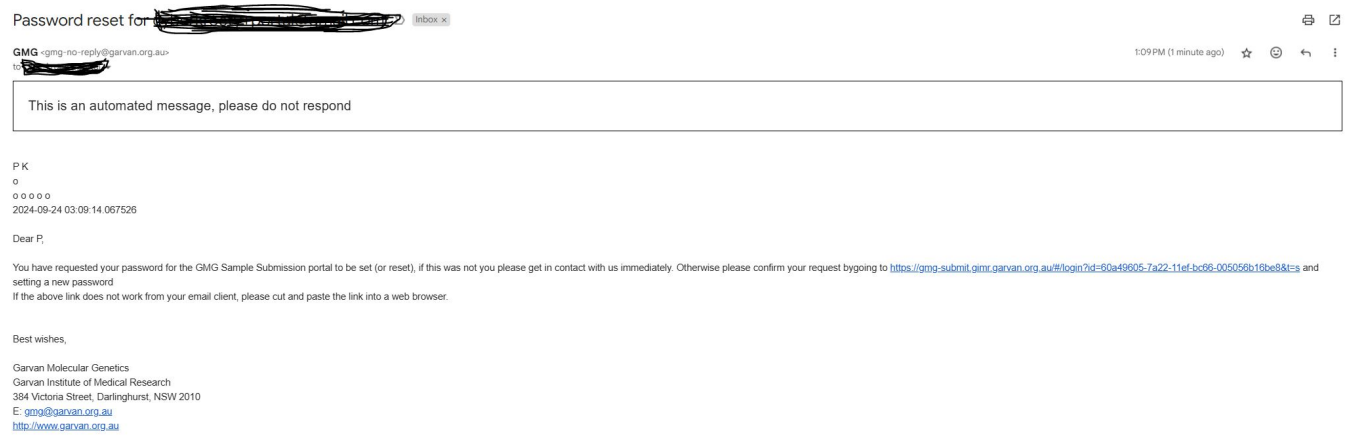


Figure 4: Popup window if link in validation email is clicked

If the link is clicked the link will take the client to the portal to set a new password, see Figure 5. In the field called "Email" enter the email associated to this account. In the field called "New Password" enter a password. In the field called “Re-enter Password” the new password must be repeated. Finally, the box called “I have read and accept the GMG Privacy and Terms & Conditions” must be ticked and the button called “Set Password” clicked.

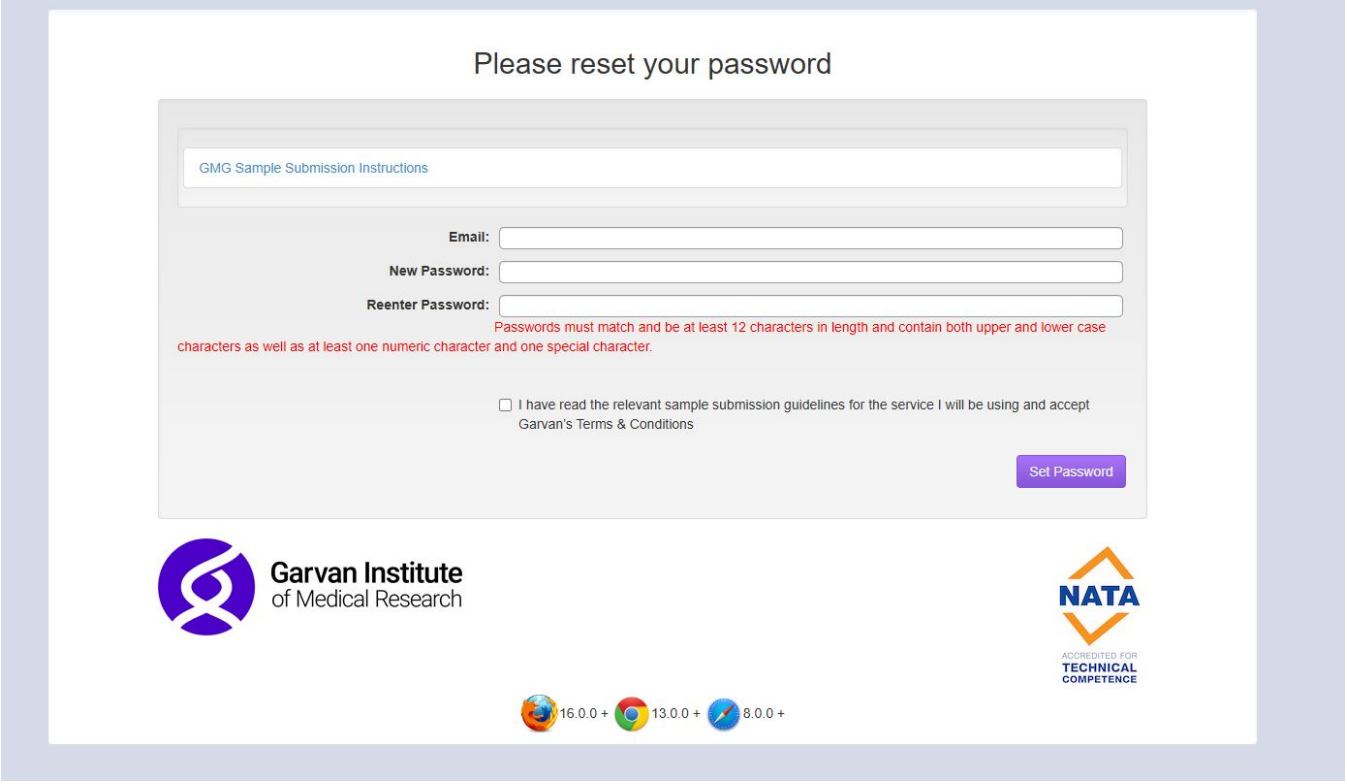


Figure 5: set password screen in portal

Login with new password

The login screen requires initially to enter the nominated account linked email address in the field called “Email:”, see Figure 6.

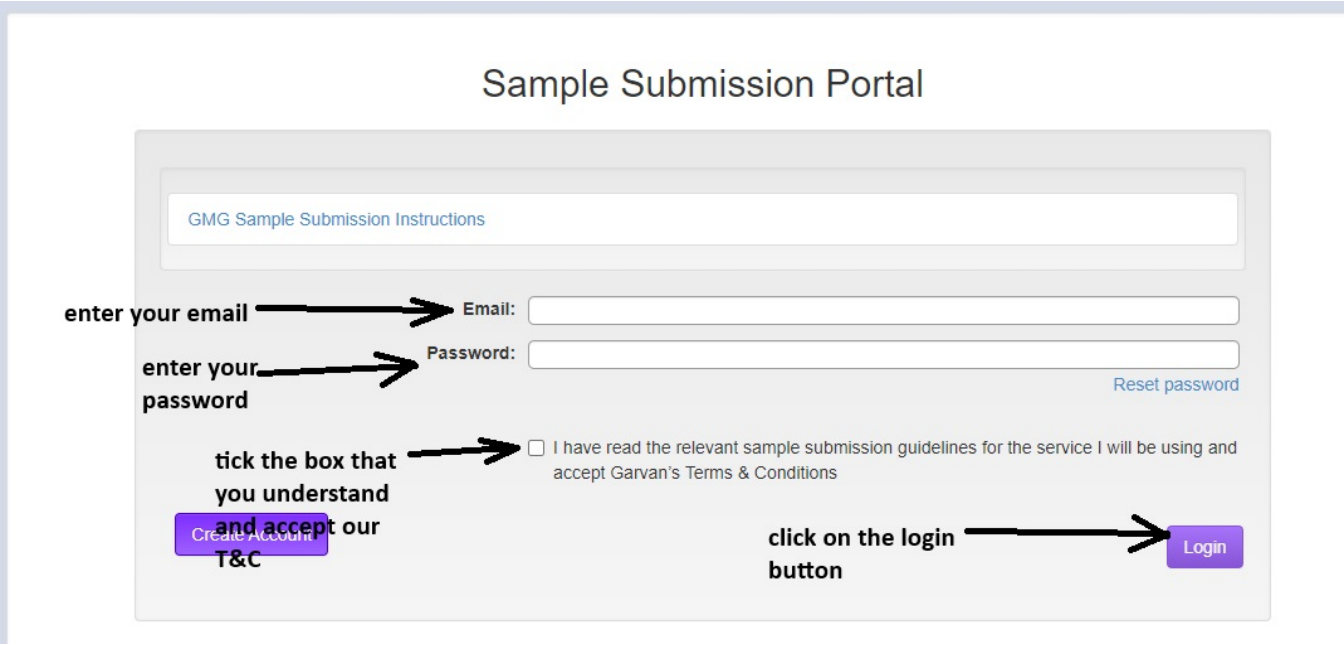


Figure 6: Login screen with example email

The password that was defined in the account setup procedure needs to be entered in the field called “Password”. Then the box called “I have read and accept the GMG Privacy and Terms & Conditions” must be ticked and the button called “Login” clicked.

Sequencing Sample Submission on MGMMS software

Once successfully logged on the first screen shown is the home screen of the software, see Figure 7. In the home screen window the current information for billing & shipping details are shown. Samples can be submitted and the pending manifests can be accessed and the status checked.

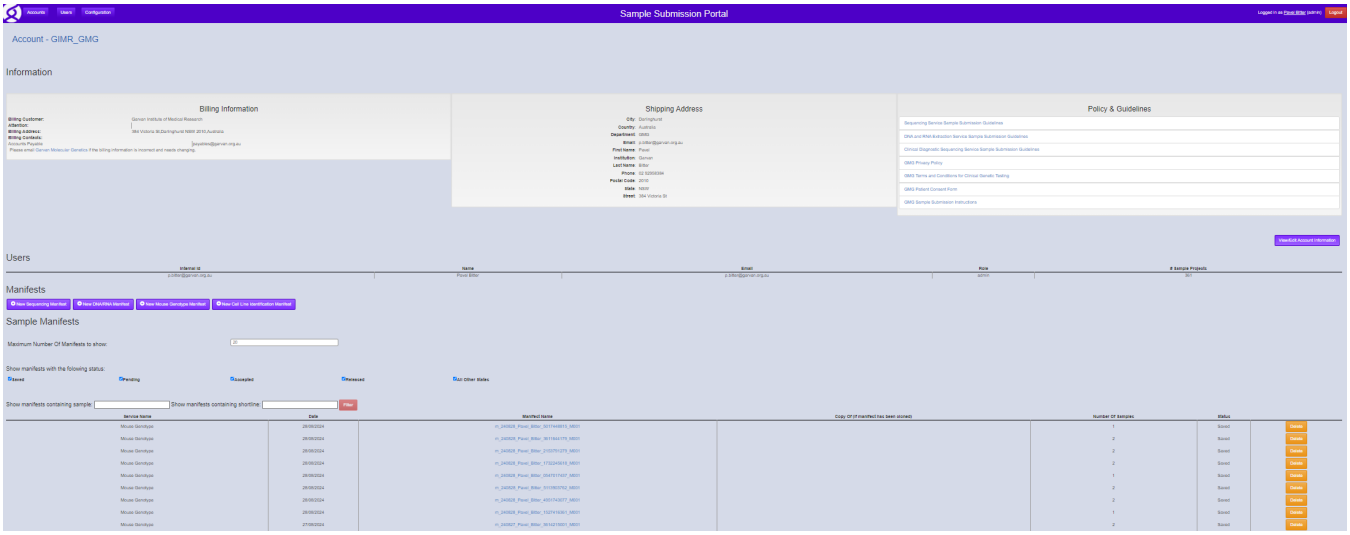


Figure 7: Example of GMGOSSP software home screen

Samples are submitted in so called “Manifests”. Manifests are the virtual entities of sample submission forms and contain the sample information and establish a container of a collection of one to many samples that are treated as a unity in processing, progression, resulting and billing.

New Sequencing Manifest

By clicking on the button called “New Sequencing Manifest” a new manifest for the Sequencing and Fragment Analysis services is generated. There are 3 service modules the client can choose from:

-Premix (Primer & DNA mixed) & Fragment Analysis

-Project Sequencing with Analysis, Project Sequencing without Analysis, Plasmid + primer separate, PCR setup + SEQ

After clicking the button called “New Sequencing Manifest” a popup window will appear that looks like Figure 8.

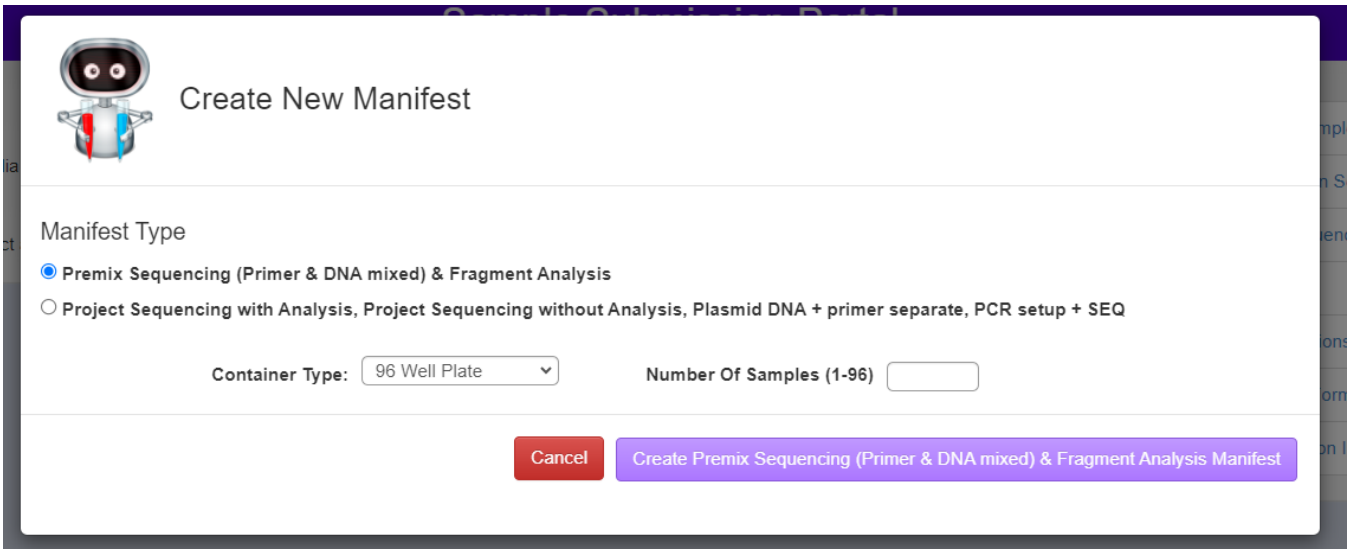


Figure 8: Popup Window to select the module for creating the manifest

By clicking on the buttons called “Premix (Primer & DNA mixed) & Fragment Analysis” or “Project Sequencing with Analysis, Project Sequencing without Analysis, Plasmid + primer separate, PCR setup + SEQ” the client can choose the module. In the field called “Number of Samples” the number of samples to be submitted can be entered. After selecting the module the client needs to click on the button called “Create”.

Premix SEQ & Fragment Analysis Module

After the module “Premix (Primer & DNA mixed) & Fragment Analysis” has been selected and the create button was clicked a new window appears, see Figure 9. The fields for Billing Information should be prefilled by the software and can be overwritten if so needed or just accepted. The Client Information field has the name and email prefilled but certain fields need to be updated using drop down menus, see Figure 10. If clients send urgent samples they can choose between 24h and 8h urgency levels in the drop down menu in the field called “Urgency”. The field called “Samples dried down” is a mandatory field and must be filled in by the client. The option is “Yes” or “No” from the drop down menu. The next field down is called “Samples are submitted Sequencing or Fragment Analysis Service” and is also mandatory. The option is either Sequencing Service or Fragment Analysis Service. The next field down is called “Do the fragment separation samples need dilution?” and is not mandatory. The option is “Yes” or “No” from the drop down menu. The next field down is called “Do the fragment separation samples need a size standard?” and is not mandatory. The option is “Yes” or “No” from the drop down menu.

Filling in sample information: Location in plate

In the rows below the Client and Billing Information fields is the area for entering sample related information, see Figure 9 lower half of the figure.

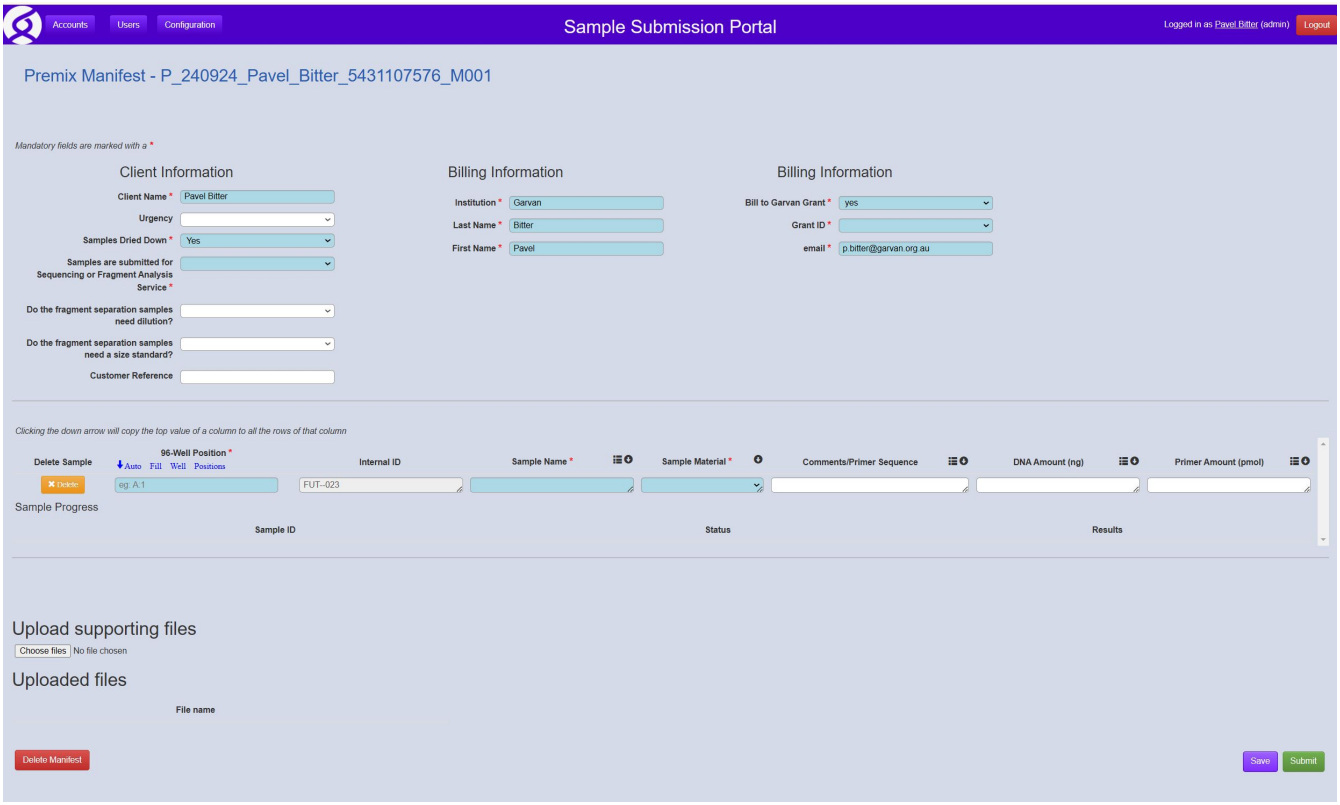


Figure 9: Premix SEQ & Fragment Analysis sample submission screen

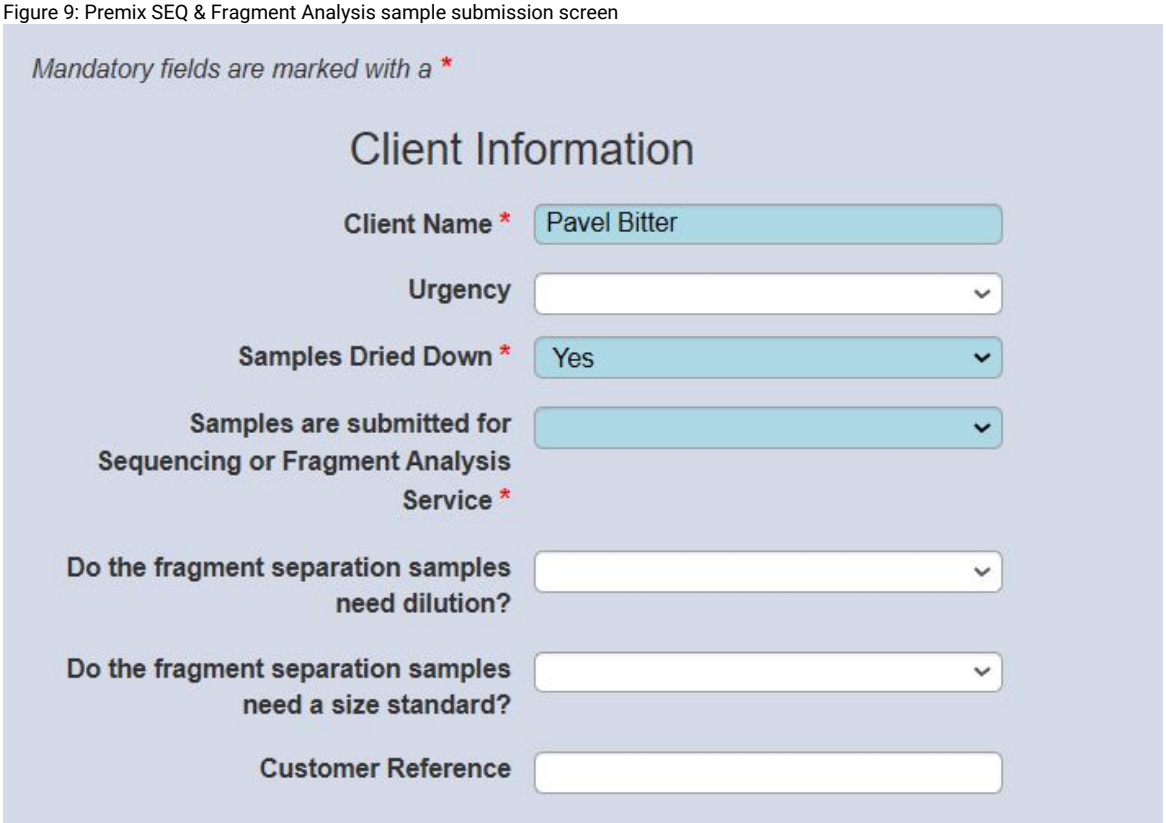


Figure 10: Premix SEQ & Fragment Analysis screen Client fields that need client input

There are two options for entering the location of the sample in the submitted Strip of tubes or the 96x well plate. If a 96x well plate is used the blue arrow can be clicked and the software will automatically fill the location for the number of samples selected. If clients have a different way of submitting samples (other than the autofill position) the autofill can be overwritten or sample locations can be entered manually in the format “letter:number” for example A:1, A:2, A:3 etc or A:1, B:1, C:1 etc. All fields must be entered, meaning no sample can be without location information in the correct format.

Filling in sample information: Location in Strips

If clients have submitted their samples in strips the location of the samples in the strips can be entered in the second column called “Strip Position”. Using the red "Auto Fill" down button will prefill the fields for each sample. If clients have a different way of submitting samples (other than the autofill position) the autofill can be overwritten or sample locations can be entered manually in the format “SX:Y” where X = strip number and Y= sample number; for example S1:1, S1:2, S1:3 etc or S2:1, S2:2, S2:3 etc. All fields must be entered, meaning no sample can be without location information in the correct format.

Filling in sample information: sample names

Clients have to enter sample names in the fields under the heading called “Sample Name”. This is the only mandatory field in the premix service. There are no rules around sample names other that they must contain more than 1 letter or number and no special characters can be used like ,.::”+=@$%^&*()<>?! or hyphen. The only permitted character is an underscore. All samples need to have a name, names can be repetitive.

Filling in sample information: optional fields

Clients can enter more information like comments, primers used, sample material DNA amount or Primer amount. These fields are not mandatory and the information will be associated to the submitted sample.

Saving the information of the manifest

After all information is entered the manifest can be saved for future submission by clicking on the button called “Save”, see Figure 11.

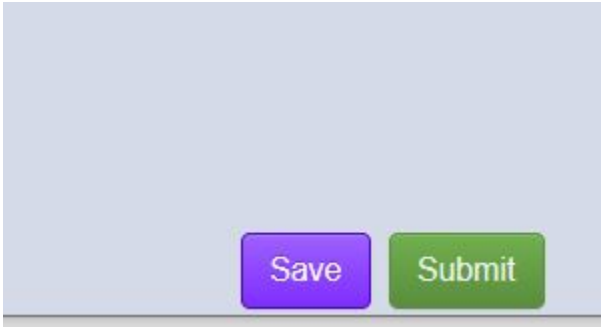


Figure 11: Premix SEQ & Fragment Analysis screen manifest Save and Submit buttons

Submitting the manifest

Clients can finally submit their manifest by clicking on the button called “Submit”, see Figure 11. If there is no error (see heading below) in the manifest the submission will be confirmed by a popup window displayed in Figure 12. This window can be confirmed by clicking on the button called “ok”.

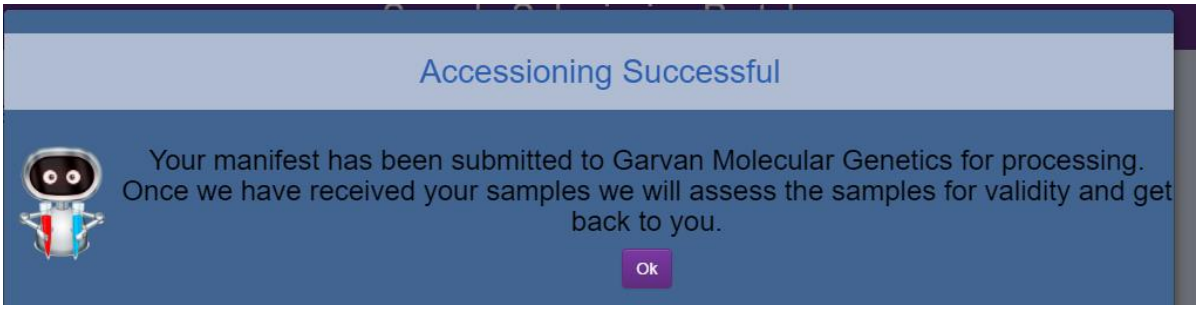


Figure 12: Premix SEQ & Fragment Analysis screen popup window after submission

Error message when submitting

If there are errors in the manifest there will be a popup window shown in Figure 13. After the button called “ok” was clicked the popup window disappears and the Premix SEQ & Fragment Analysis screen shows the manifest with the fields in which the error occurred in red, see Figure 14. After correcting the errors the client can press the button called “Submit” again.



Figure 13: Premix SEQ & Fragment Analysis screen error popup window

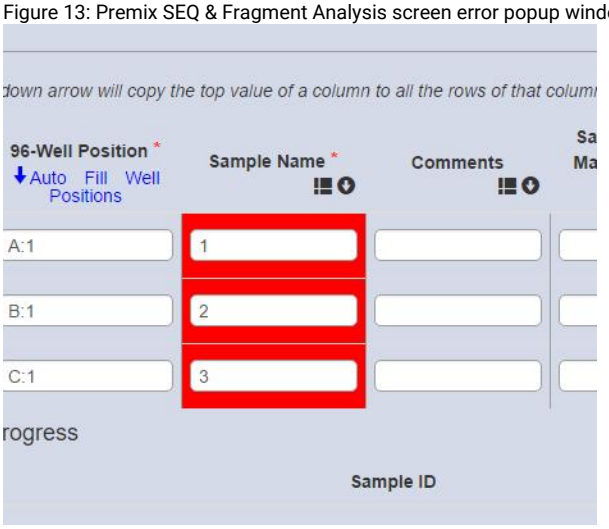


Figure 14: Premix SEQ & Fragment Analysis screen with errors highlighted red

Project Sequencing with Analysis, Project Sequencing without Analysis, Plasmid + primer separate, PCR setup + SEQ

After the module “Project Sequencing with Analysis, Project Sequencing without Analysis, Plasmid + primer separate, PCR setup + SEQ” has been selected and the create button was clicked a new window appears, see Figure 15. The fields for Billing Information should be prefilled by the software and can be overwritten if so needed or just accepted. The Client Information field has the name and email prefilled but certain fields need to be updated using drop down menus, see Figure 16. If clients send urgent samples they can choose between "8 working days - 2x price" or "4 working days - 4x price" urgency levels in the drop down menu in the field called “Urgency”. The field called “Project name” is a non-mandatory field and can be filled by the client with a project name of their choice. The next field down is called “Internal or External Project” and is also a non mandatory field. The option is either “internal” or “external” which can be selected from the dropdown menu. The next field down is called “Requested Sequencing Service” and is a mandatory field. The options appear in a dropdown menu, see Figure 16, and the options are:

-Agarose gel run

-cDNA synthesis

-Plasmid Mix & SEQ unidirectional with primer provided

-Plasmid Mix & SEQ unidirectional with primer ordered by GMG

-PCR Mix & SEQ (bidirectional)

-PCR Setup & SEQ without analysis

-PCR Setup & SEQ with analysis

-PCR Desing & SEQ with analysis and report

One of these 8 modules needs to be selected

The next field down is called “Comments” and is non-mandatory. Clients can enter comments they think are relevant for the project they are submitting and will be good to know for the operator and in regards to analysis or billing.

The next field down is called “Customer Reference” and is non-mandatory. Clients can enter a reference in this field.

Filling in sample information: Location in plate

In the rows below the Client and Billing Information fields is the area for entering sample related information, see Figure 15 lower half of the figure. The blue arrow can be clicked and the software will automatically fill the location for the number of samples selected. If clients have a different way of submitting samples (other than the autofill position) the autofill can be overwritten or sample locations can be entered manually in the format “letter: number” for example A:1, A:2, A:3 etc or A:1, B:1, C:1 etc. All fields must be entered, meaning no sample can be without location information in the correct format.

Filling in sample information: Sample Name

Clients have to enter sample names in the fields under the heading called “Sample Name”. This is a mandatory field. There are no rules around sample names other that they must contain more than 1 letter or number and no special characters can be used like ,.::+=@$%^&*()<>?! or hyphen. The only permitted character is an underscore. All samples need to have a name, names can be repetitive. Samples can also be copied and pasted from excel sheets by clicking on the little table button, see Figure 17, yellow highlighted. A popup window will appear, see Figure 18, and sample names can be copied from any source file into this window. Clicking on the button called “Save will apply the sample names into the sample name fields of the software.

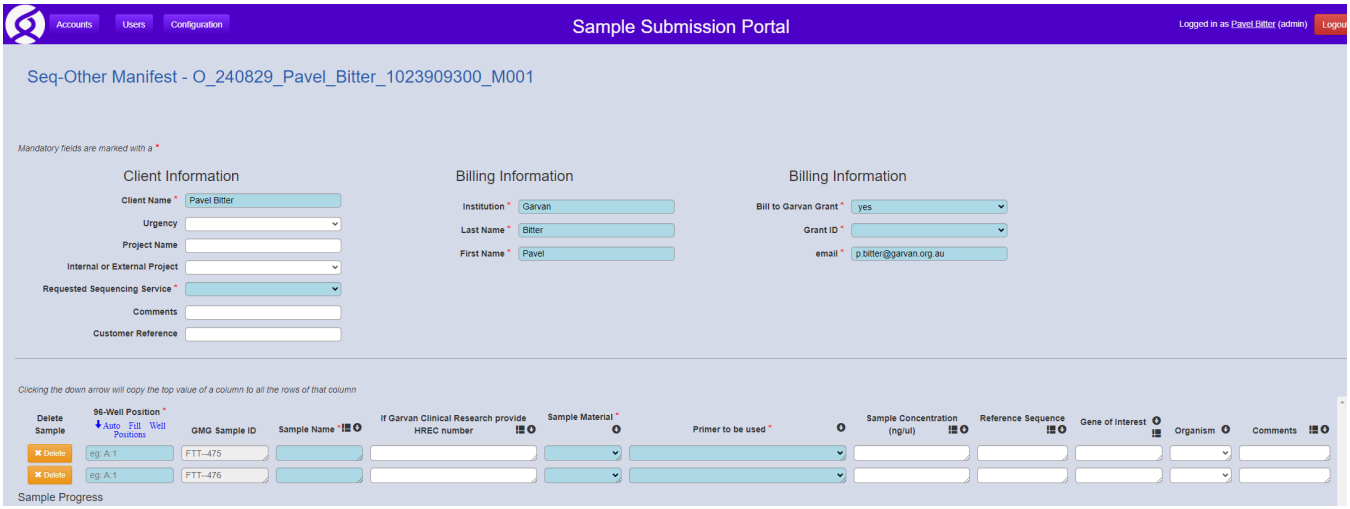


Figure 15: Project Sequencing with Analysis, Project Sequencing without Analysis, Plasmid + primer separate, PCR setup + SEQ sample submission screen

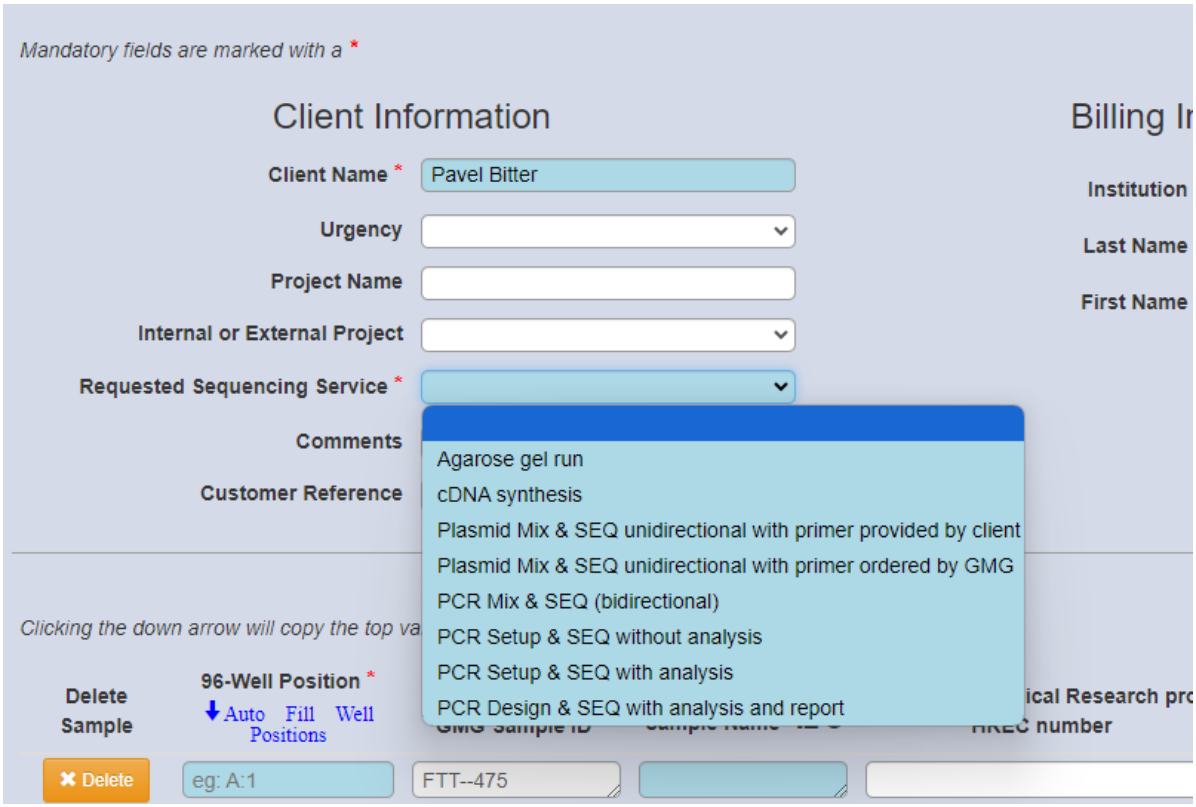


Figure 16: Client information field that need client input

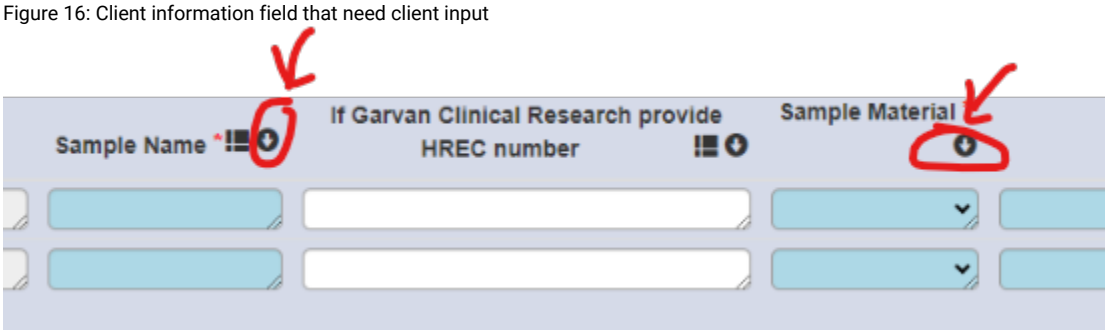


Figure 17: Table fill and downfill options

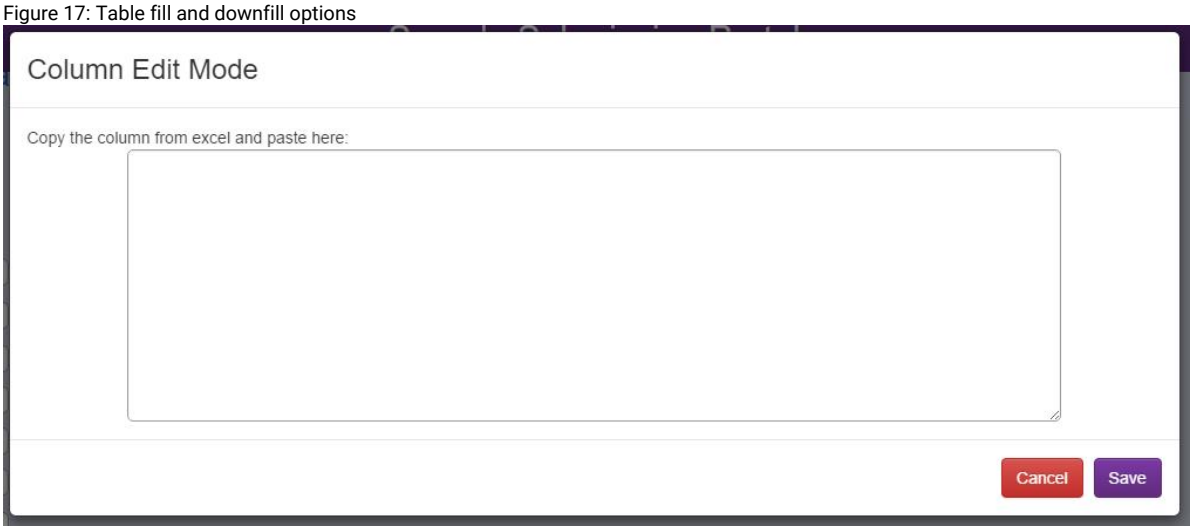


Figure 18: Sample name input via Excel copy and paste input

Filling in sample information: Sample Material

Clients have to enter the material of the samples they are sending in the field called “Sample Material”. This is a mandatory field. There are several options to choose from in the dropdown menu like “Blood”, “Cells”, “Buffy Coat”, “DNA”, “cDNA”, “Tissue”, etc. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 17, red highlighted.

Filling in sample information: Primer to be used

Clients have to enter the primer that they want to be used with the submitted samples in the field called “Primer to be used”. This is a mandatory field. There are several options to choose from in the dropdown menu:

submitted with sample

to be designed by GMG from your submitted SEQ file

2_Primer_AOX_3'_Rev

3_Primer_3_AOX_5'_For

4_Primer_BGH_Reverse

5_Primer_CMV_For (-50)

6_Primer_CMV_Forward

1_Primer_M13_For (-47)

8_Primer_M13_For (-20)

7_Primer_M13_Rev (distant)

9_Primer_M13_Rev(17mer)

10_Primer_pA (-120)

11_Primer_pET_Rev

12_Primer_pGAP_For

13_Primer_pGL_RV_pr3

14_Primer_pGL_pr2_R

23_Primer_pGEX_For

24_Primer_pGEX_Rev

25_Primer_pET_3'

15_Primer_puc_U1

16_Primer_puc_U2

18_Primer_Primer_ori

17_Primer_Revers_A

19_Primer_SP6

20_Primer_T3_Promoter

21_Primer_T7

22_Primer_T7_Terminator

The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 17, red highlighted.

Filling in sample information: non-mandatory fields

Clients can enter further information about their samples in several non-mandatory fields which are called “Sample Concentration (ng/ul)”, “Reference Sequence”, “Gene of Interest”, Organism” and “Comments”. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 17, red highlighted.

Saving the manifest

After all information is entered the manifest can be saved for future submission by clicking on the button called “Save”, see Figure 11.

Submitting the manifest

Clients can finally submit their manifest by clicking on the button called “Submit”, Figure 11see . If there is no error (see heading below) in the manifest the submission will be confirmed by a popup window displayed in Figure 12. This window can be confirmed by clicking on the button called “ok”.

Error message when submitting

If there are errors in the manifest there will be a popup window shown in Figure 13. After the button called “ok” was clicked the popup window disappears and the SEQ other module screen shows the manifest with the fields in which the error occurred in red, see Figure 19. After correcting the errors the client can press the button called “Submit” again.

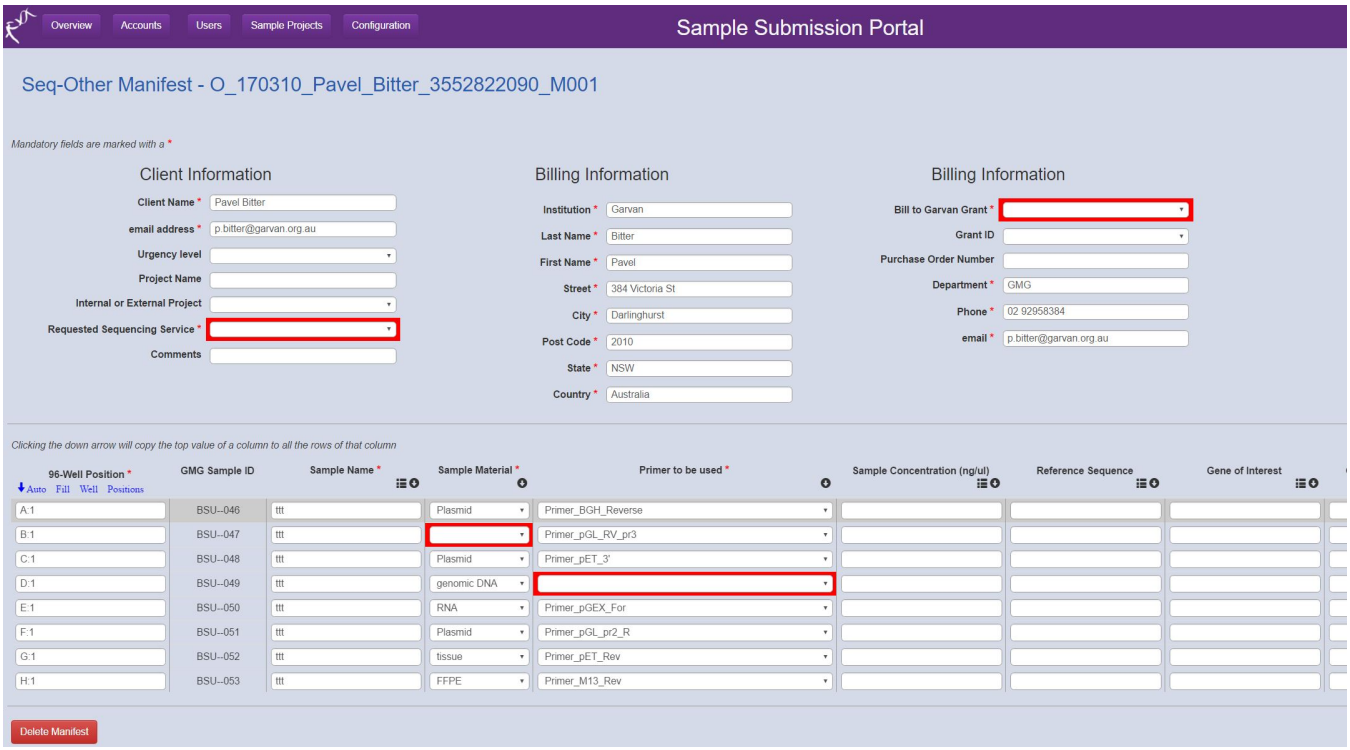


Figure 19: Sample Submission creen with errors highlighted red

Nucleic Acid Extraction Sample Submission on MMGMS software

Once successfully logged on the first screen shown is the home screen of the software, see Figure 7. In the home screen window the current information for billing & shipping details are shown. Samples can be submitted and the pending manifests can be accessed and the status checked. Samples are submitted in so called “Manifests”. Manifests are the virtual entities which contain the sample information and establish a collection of 1 to many samples that are treated as a unity in processing, progression, resulting and billing.

New Nucleic Acid Extraction Manifest

By clicking on the button called “New DNA/RNA Manifest” a new manifest for the Nucleic Acid Extraction Service is generated. There are 3 service modules the client can choose from:

-NextGen Seq DNA Extraction (only for Kinghorn SEQ platform clients)

-NextGen Seq RNA Extraction (only for Kinghorn SEQ platform clients)

-Manual Extraction

After clicking the button called “New DNA/RNA Manifest” a popup window will appear that looks like Figure 20.

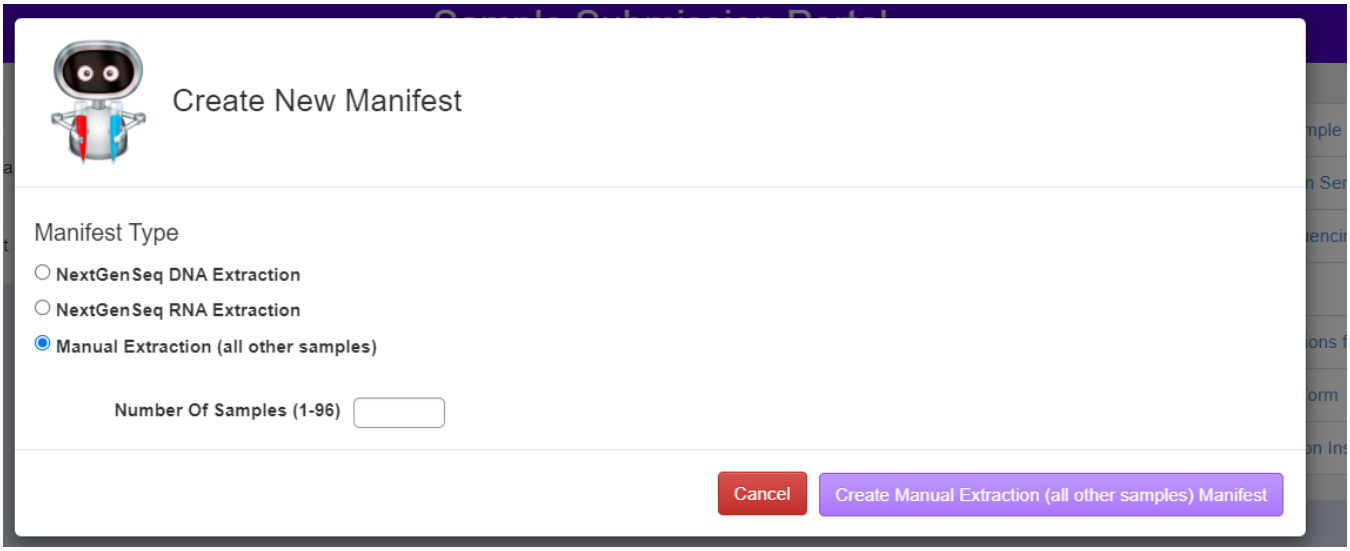


Figure 20: Popup Window to select the module for creating a manifest

By clicking on the buttons called “NextGen Seq DNA Extraction” or “NextGen Seq RNA Extraction” or “Manual Extraction” the client can choose the module. In the field called “Number of Samples” the number of samples to be submitted can be entered. After selecting the module the client needs to click on the button called “Create”.

NextGen Seq DNA Extraction Module

After the module “NextGen Seq DNA Extraction” has been selected and the create button was clicked a new window appears, see Figure 21. The fields for Billing Information should be prefilled by the software and can be overwritten if so needed or just accepted. The Client Information field has the name and email prefilled but certain fields need to be updated using drop down menus, see Figure 22. If clients send urgent samples they can choose between 24h and 8h urgency levels in the drop down menu in the field called “Urgency”. The field called “Sample Type” is a mandatory field and must be filled in by the client. The options are “Tissue (excl. homogenization)”, "Cells", “Blood”, “Buffy Coat”. The next field down is called “Qubit Concentration Measurement” and is not mandatory. The option is either is “Yes” or “No” from the drop down menu. The next field down is called “Nanodrop Concentration Measurement” and is not mandatory. The option is either is “Yes” or “No” from the drop down menu. The next field down is called “Agilent Gel Analysis” and is not mandatory. The option is “Yes” or “No” from the drop down menu.

Filling in sample information: Location in plate

In the rows below the Client and Billing Information fields is the area for entering sample related information, see Figure 21 lower half of the figure.

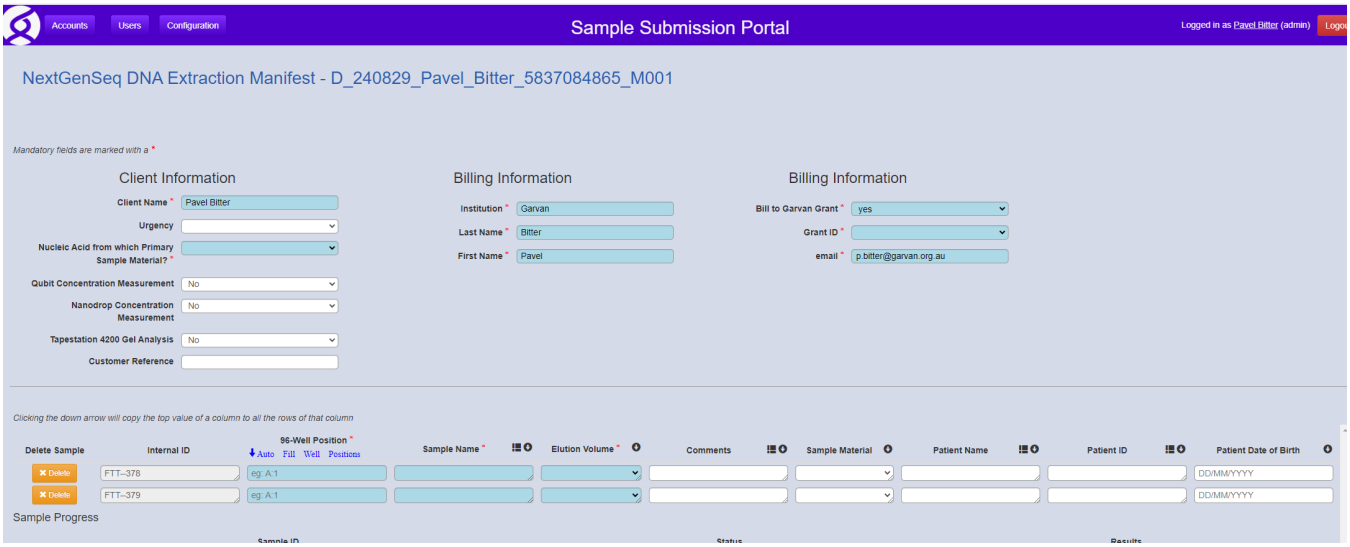


Figure 21: NextGen Seq DNA Extraction sample submission screen

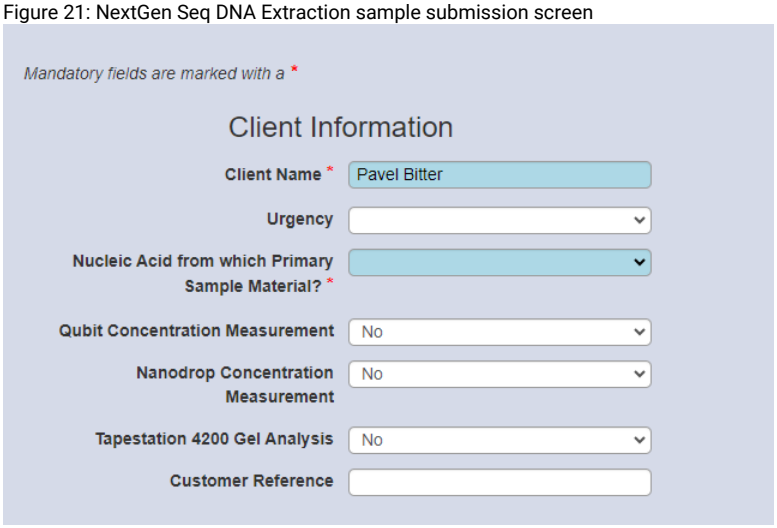


Figure 22: NextGen Seq DNA Extraction screen Client fields that need client input

The blue arrow can be clicked and the software will automatically fill the location for the number of samples selected. If clients have a different way of submitting samples (other than the autofill position) the autofill can be overwritten or sample locations can be entered manually in the format “letter: number” for example A:1, A:2, A:3 etc or A:1, B:1, C:1 etc. All fields must be entered, meaning no sample can be without location information in the correct format.

Filling in sample information: sample names

Clients have to enter sample names in the fields under the heading called “Sample Name”. This is the only mandatory field in this module. There are no rules around sample names other that they must contain more than 1 letter or number and no special characters can be used like ,.::”+=@$%^&*()<>?! or hyphen. The only permitted character is an underscore. All samples need to have a name, names can be repetitive. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 23, red highlighted. The table icon can be used to import from excel sheets via a popup window that allows copy and paste, see Figure 23, yellow highlight.

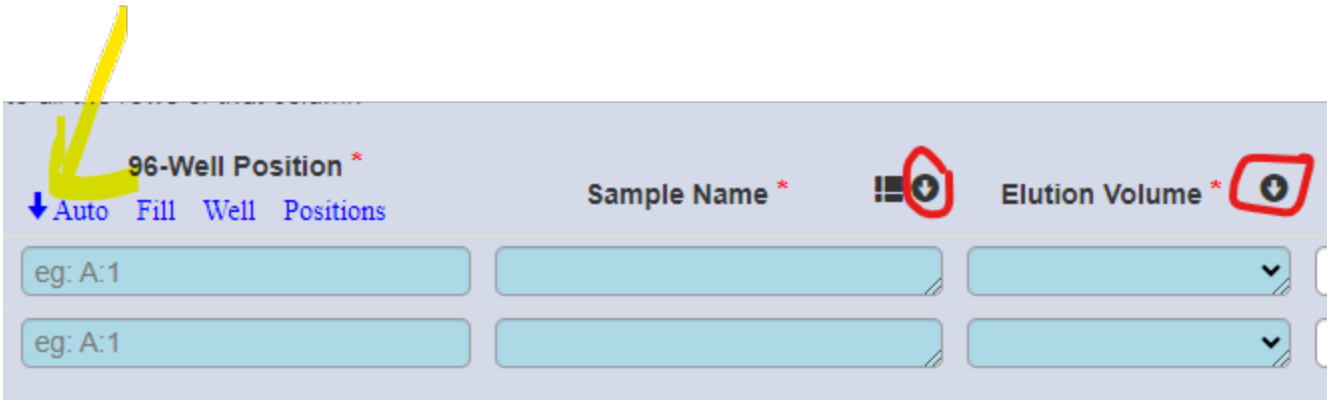


Figure 23: Arrow down for down-fill highlighted in red

Filling in sample information: optional fields

Especially for clinical samples that can also be submitted for this service clients can enter patient information in the following fields: “Comments”, “Patient Name”, “Patient ID”, “Patient Date of Birth”, “Patient Address”, “Date Sample Taken”, “Referring Clinician”, “Referring Clinician Address”, “Referring Laboratory Name” and “Referring Laboratory Address”. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 23, red highlighted. The table icon can be used to import from excel sheets via a popup window that allows copy and paste, Figure 23, yellow highlight.

To enter the Date of Birth of the patient or when the sample was taken the date can either be entered by typing the date in the field in the format DD/MM /YYYY, so for a patient with a date of birth on the 2nd of August 2000 the correct entry would be “02/08/2000” or the entry can be done via a popdown calendar, see Figure 24. Navigation in the calendar window occurs with the left and right arrows for selection of the month and year and by clicking on the number of the day for selection of the day.

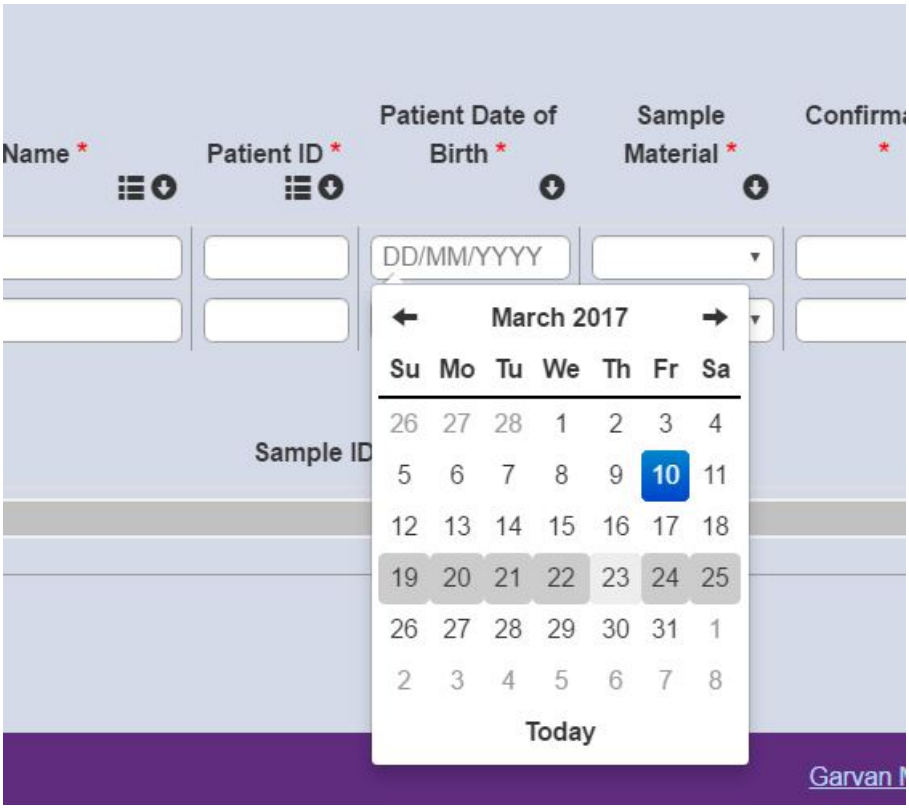


Figure 24: Patient Date of Birth or Sample Taken dropdown calendar entry

Saving the information of the manifest

After all information is entered the manifest can be saved for future submission by clicking on the button called “Save”, see Figure 25.

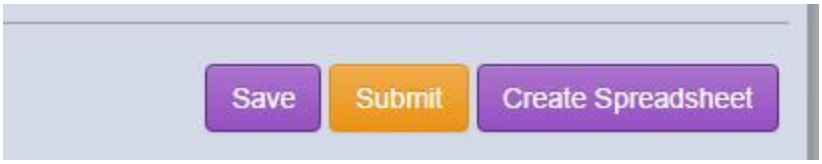


Figure 25: NextGen Seq DNA Extraction screen manifest Save and Submit buttons

Submitting the manifest

Clients can finally submit their manifest by clicking on the button called “Submit”, see Figure 25. If there is no error (see heading below) in the manifest the submission will be confirmed by a popup window displayed in Figure 26. This window can be confirmed by clicking on the button called “ok”.

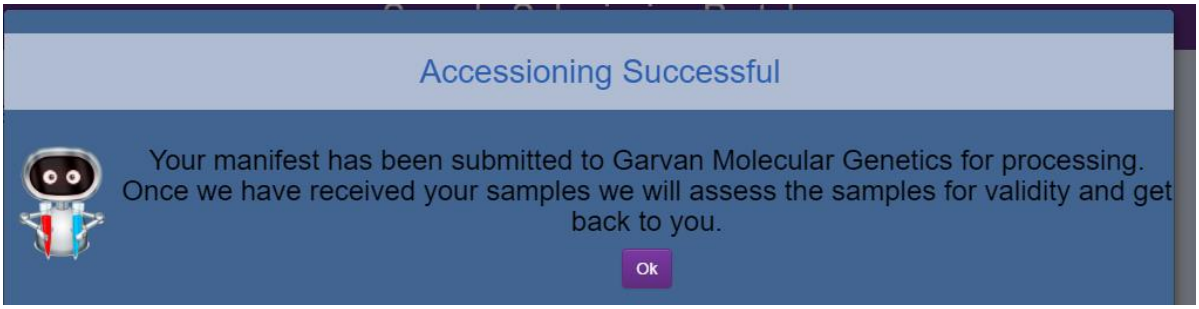


Figure 26: High Throughput DNA Extraction screen popup window after submission

Error message when submitting

If there are errors in the manifest there will be a popup window shown in Figure 27. After the button called “ok” was clicked the popup window disappears and the High Throughput DNA Extraction screen shows the manifest with the fields in which the error occurred in red, see Figure 28. After correcting the errors the client can press the button called “Submit” again.



Figure 27: NextGen Seq DNA Extraction screen error popup window

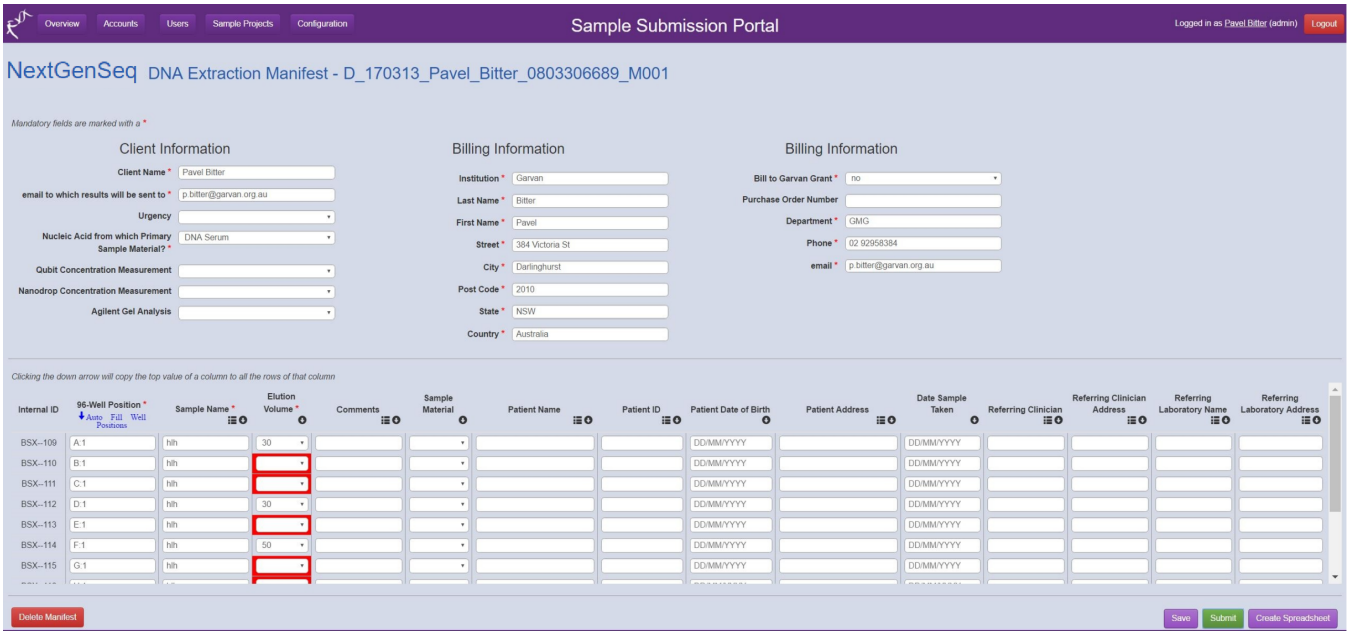


Figure 28: NextGen Seq DNA Extraction screen with errors highlighted red

NextGen Seq RNA Extraction Module

After the module “NextGen Seq RNA Extraction” has been selected and the create button was clicked a new window appears, see figure 42. The fields for Billing Information should be prefilled by the software and can be overwritten if so needed or just accepted. The Client Information field has the name and email prefilled but certain fields need to be updated using drop down menus, see figure 43. If clients send urgent samples they can choose between 24h and 8h urgency levels in the drop down menu in the field called “Urgency”. The field called “Sample Type” is a mandatory field and must be filled in by the client. The options are “Tissue (excl. homogenization)”, “Blood”, “Buffy Coat”, “Cells”. The next field down is called “Qubit Concentration Measurement” and is not mandatory. The option is either is “Yes” or “No” from the drop down menu. The next field down is called “Nanodrop Concentration Measurement” and is not mandatory. The option is either is “Yes” or “No” from the drop down menu. The next field down is called “Agilent Gel Analysis” and is not mandatory. The option is “Yes” or “No” from the drop down menu.

Filling in sample information: Location in plate

In the rows below the Client and Billing Information fields is the area for entering sample related information, see Figure 29 lower half of the figure.

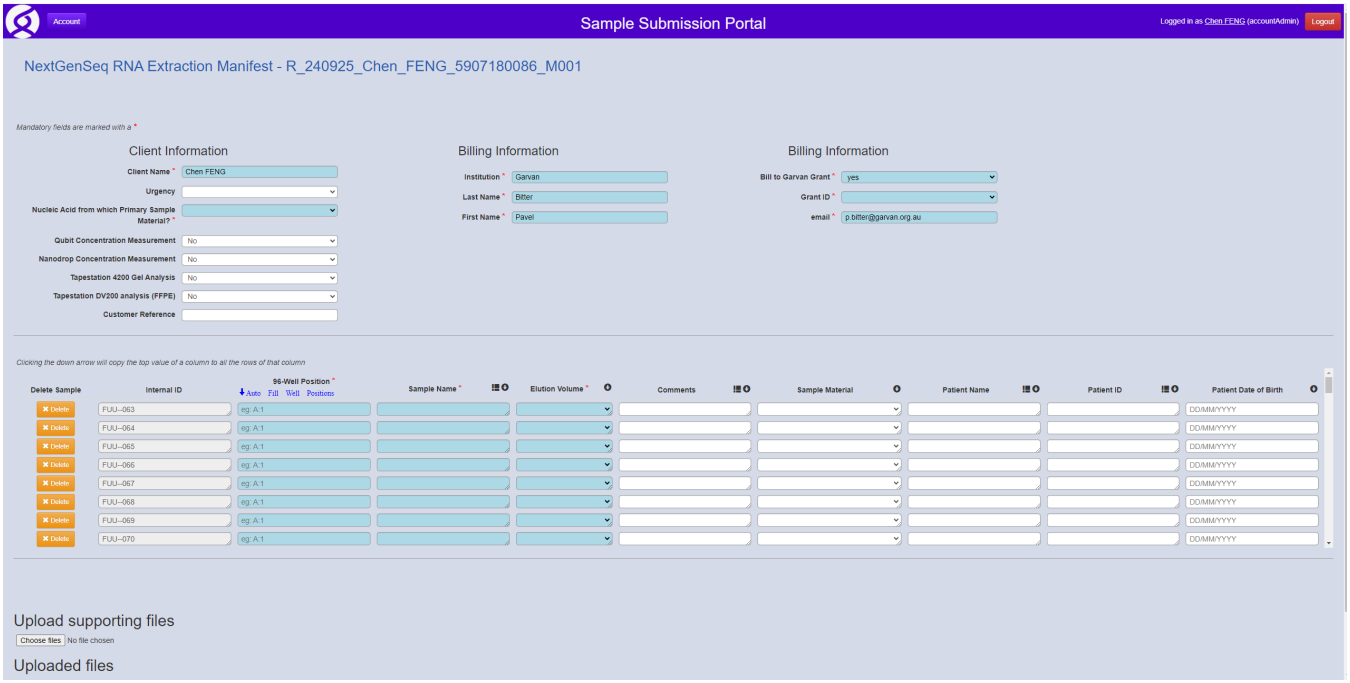


Figure 29: NextGen Seq RNA Extraction sample submission screen

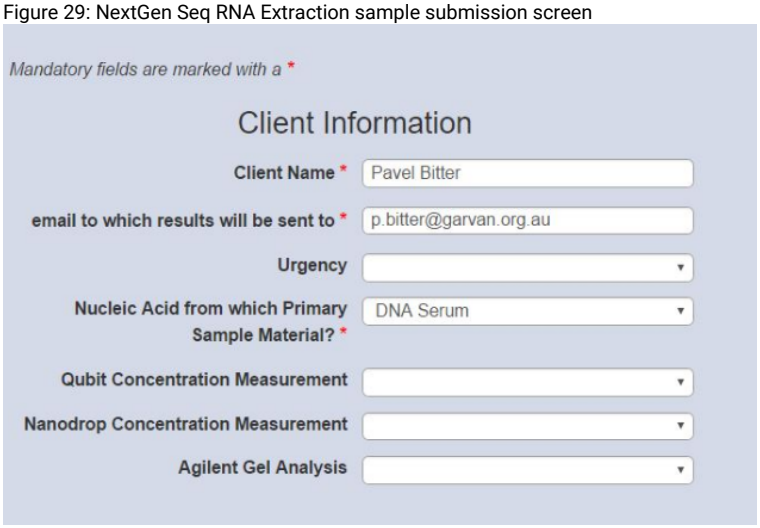


Figure 30: NextGen Seq RNA Extraction screen Client fields that need client input

The blue arrow can be clicked and the software will automatically fill the location for the number of samples selected. If clients have a different way of submitting samples (other than the autofill position) the autofill can be overwritten or sample locations can be entered manually in the format “letter: number” for example A:1, A:2, A:3 etc or A:1, B:1, C:1 etc. All fields must be entered, meaning no sample can be without location information in the correct format.

Filling in sample information: sample names

Clients have to enter sample names in the fields under the heading called “Sample Name”. This is the only mandatory field in this module. There are no rules around sample names other that they must contain more than 1 letter or number and no special characters can be used like ,.::”+=@$%^&*()<>?! or hyphen. The only permitted character is an underscore. All samples need to have a name, names can be repetitive. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 23, red highlighted. The table icon can be used to import from excel sheets via a popup window that allows copy and paste, see Figure 23, yellow highlight.

Filling in sample information: optional fields

Especially for clinical samples that can also be submitted for this service clients can enter patient information in the following fields: “Comments”, “Patient Name”, “Patient ID”, “Patient Date of Birth”, “Patient Address”, “Date Sample Taken”, “Referring Clinician”, “Referring Clinician Address”, “Referring Laboratory Name” and “Referring Laboratory Address”. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 23, red highlighted. The table icon can be used to import from excel sheets via a popup window that allows copy and paste, see Figure 23, yellow highlight.

To enter the Date of Birth of the patient or when the sample was taken the date can either be entered by typing the date in the field in the format DD/MM /YYYY, so for a patient with a date of birth on the 2nd of August 2000 the correct entry would be “02/08/2000” or the entry can be done via a popdown calendar, see Figure 24. Navigation in the calendar window occurs with the left and right arrows for selection of the month and year and by clicking on the number of the day for selection of the day.

Saving the information of the manifest

After all information is entered the manifest can be saved for future submission by clicking on the button called “Save”, see Figure 25.

Submitting the manifest

Clients can finally submit their manifest by clicking on the button called “Submit”, see Figure 25. If there is no error (see heading below) in the manifest the submission will be confirmed by a popup window displayed in Figure 26 This window can be confirmed by clicking on the button called “ok”.

Error message when submitting

If there are errors in the manifest there will be a popup window shown Figure 27in . After the button called “ok” was clicked the popup window disappears and the High Throughput RNA Extraction screen shows the manifest with the fields in which the error occurred in red, see

Error rendering macro 'caption-ref' : Caption with anchor=7 could not be found.
. After correcting the errors the client can press the button called “Submit” again.

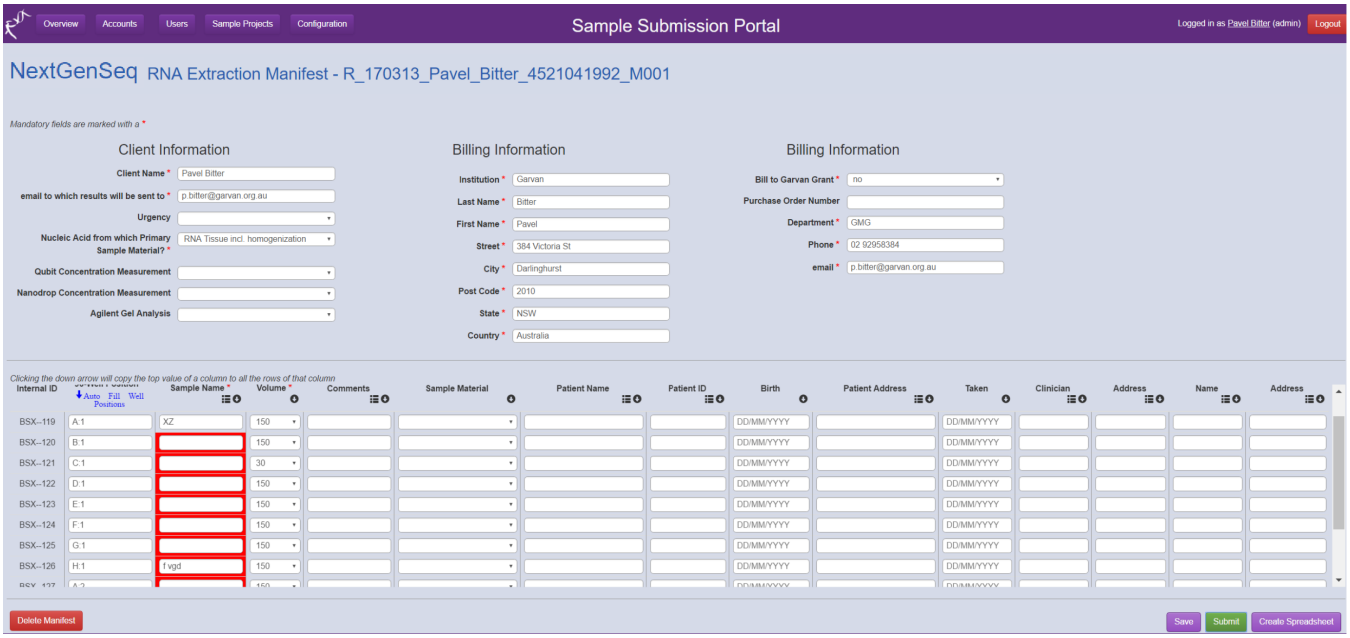


Figure 31: NextGen Seq RNA Extraction screen with errors highlighted red

Manual Extraction Module

After the module “Manual Extraction” has been selected and the create button was clicked a new window appears, Figure 32see . The fields for Billing Information should be prefilled by the software and can be overwritten if so needed or just accepted. The Client Information field has the name and email prefilled but certain fields need to be updated using drop down menus, see Figure 33. If clients send urgent samples they can choose between 24h and 8h urgency levels in the drop down menu in the field called “Urgency”.

Clients can choose the DNA/RNA extraction service in the field called "Extraction of Which Nucleic Acid". The field called “Sample Material or Service Type” is a mandatory field and must be filled in by the client. The options are “Tissue (excl. homogenization)”, “Tissue (incl. homogenization)”, “Buccal Swab (OraCollect)”, “Blood”, “Buffy Coat”, “Cells”, “PAXgene”, “FFPE”, “Serum” or “Other”. The next field down is called “Qubit Concentration Measurement” and is not mandatory. The option is either is “Yes” or “No” from the drop down menu. The next field down is called “Nanodrop Concentration Measurement” and is not mandatory. The option is either is “Yes” or “No” from the drop down menu. The next field down is called “Agilent Gel Analysis” and is not mandatory. The option is “Yes” or “No” from the drop down menu. If clients send samples for tapestation analysis only, they can choose "Tapestation Run" option in the field called “Sample Material or Service Type”, see Figure 32.

Filling in sample information: Location in plate

In the rows below the Client and Billing Information fields is the area for entering sample related information, see Figure 32 lower half of the figure.

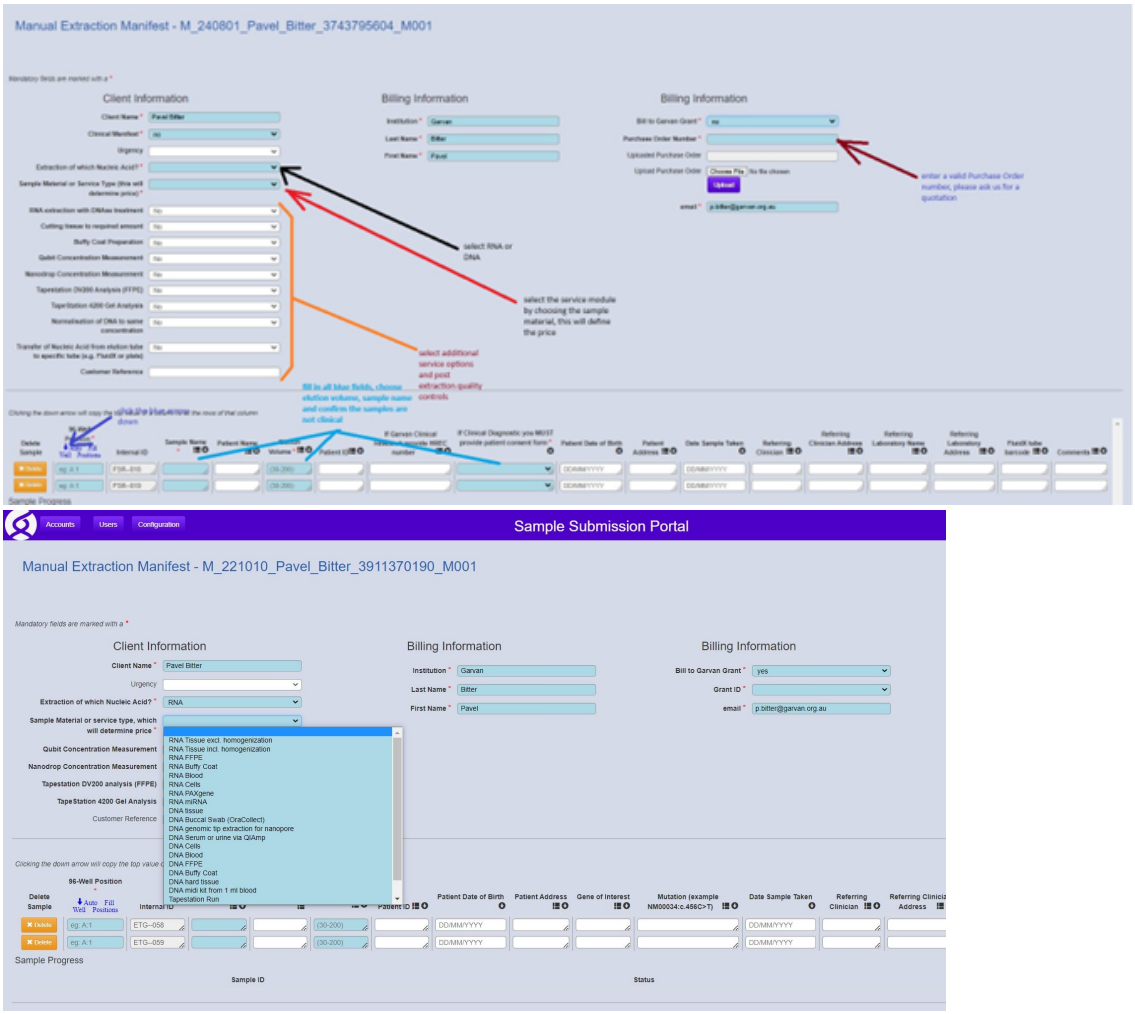


Figure 32: Manual Extraction sample submission screen



Figure 33: Manual Extraction screen Client fields that need client input

The blue arrow can be clicked and the software will automatically fill the location for the number of samples selected. If clients have a different way of submitting samples (other than the autofill position) the autofill can be overwritten or sample locations can be entered manually in the format “letter: number” for example A:1, A:2, A:3 etc or A:1, B:1, C:1 etc. All fields must be entered, meaning no sample can be without location information in the correct format.

Filling in sample information: sample names

Clients have to enter sample names in the fields under the heading called “Sample Name”. This is the only mandatory field in this module. There are no rules around sample names other that they must contain more than 1 letter or number and no special characters can be used like ,.::”+=@$%^&*()<>?! or hyphen. The only permitted character is an underscore. All samples need to have a name, names can be repetitive.

Filling in sample information: optional fields

Especially for clinical samples that can also be submitted for this service clients can enter patient information in the following fields: “Comments”, “Patient Name”, “Patient ID”, “Patient Date of Birth”, “Patient Address”, “Date Sample Taken”, “Referring Clinician”, “Referring Clinician Address”, “Referring Laboratory Name” and “Referring Laboratory Address”. The arrow down can be used to fill the entire column with the selected sample material of the first field, see Figure 34, red highlighted. The table icon can be used to import from excel sheets via a popup window that allows copy and paste, see Figure 9, yellow highlight.



Figure 34: Manual Extraction screen table fill and downfill options

To enter the Date of Birth of the patient or when the sample was taken the date can either be entered by typing the date in the field in the format DD/MM /YYYY, so for a patient with a date of birth on the 2nd of August 2000 the correct entry would be “02/08/2000” or the entry can be done via a popdown calendar, see Figure 35. Navigation in the calendar window occurs with the left and right arrows for selection of the month and year and by clicking on the number of the day for selection of the day.

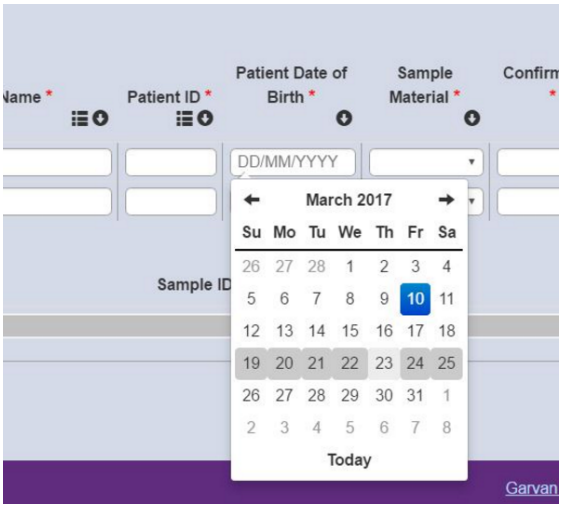


Figure 35: Patient Date of Birth or Sample Taken entry dropdown calendar entry

Saving the information of the manifest

After all information is entered the manifest can be saved for future submission by clicking on the button called “Save”, see Figure 36.

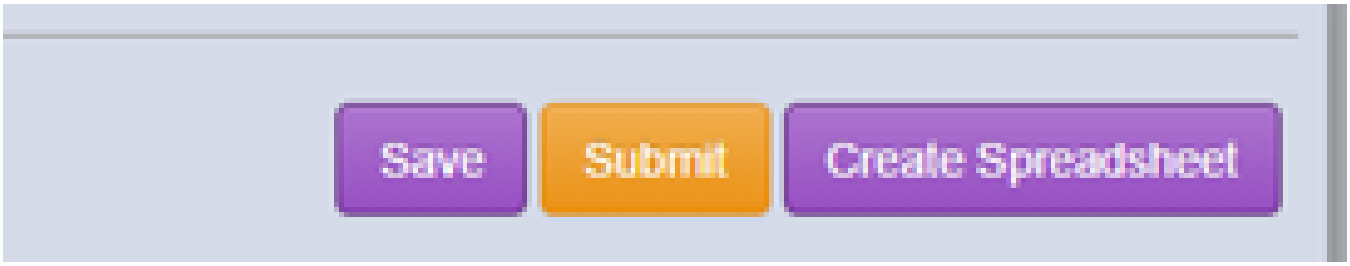


Figure 36: Manual Extraction screen manifest Save and Submit buttons

Submitting the manifest

Clients can finally submit their manifest by clicking on the button called “Submit”, see Figure 36. If there is no error (see heading below) in the manifest the submission will be confirmed by a popup window displayed in Figure 37. This window can be confirmed by clicking on the button called “ok”.

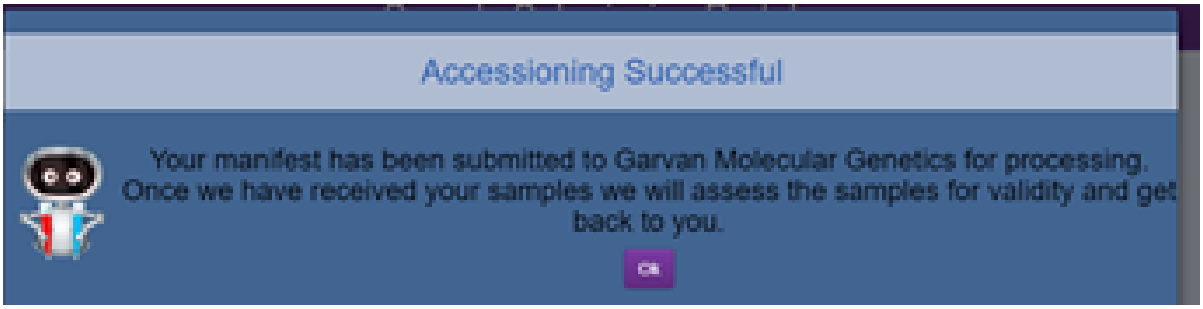


Figure 37: Manual Extraction screen popup window after submission

Error message when submitting

If there are errors in the manifest there will be a popup window shown in Figure 38. After the button called “ok” was clicked the popup window disappears and the Manual Extraction screen shows the manifest with the fields in which the error occurred in red, see Figure 39. After correcting the errors the client can press the button called “Submit” again.



Figure 38: Manual Extraction screen error popup window

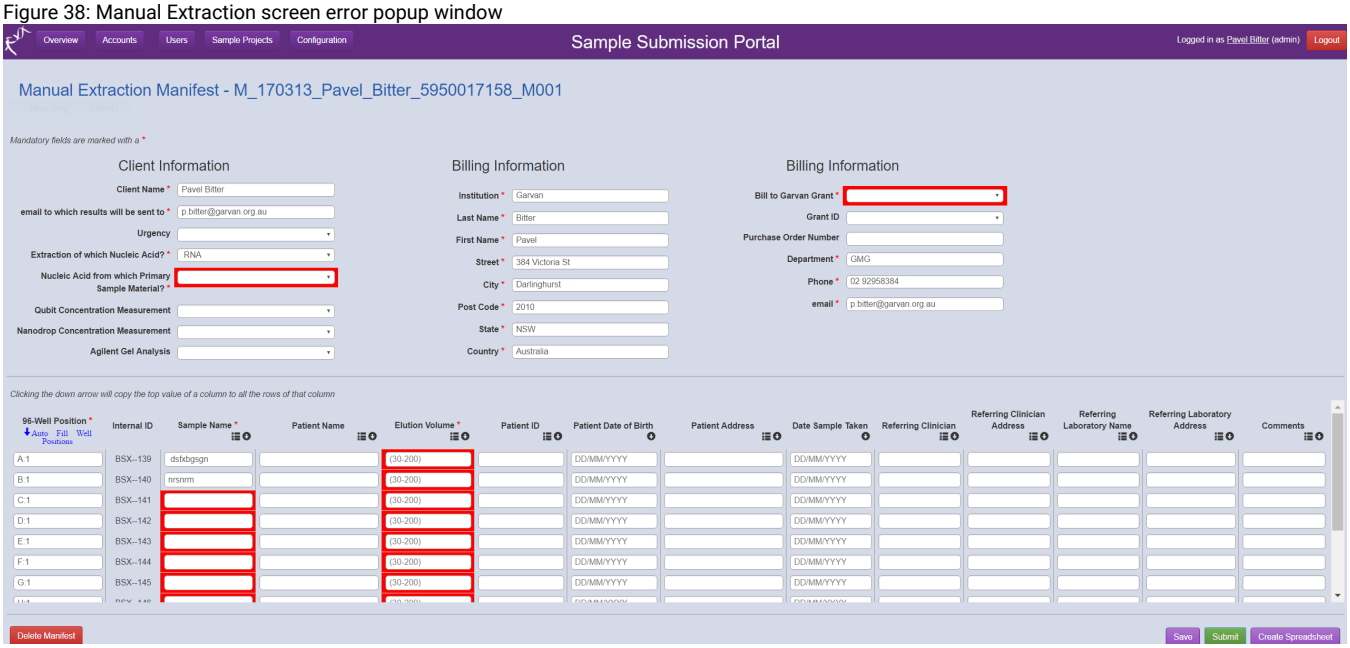


Figure 39: Manual Extraction screen with errors highlighted red

Mouse Genotyping Sample Submission on MMGMS software

Single user accounts

For accounts that are set up for single users the next screen will be the account screen directly.

Multiple user accounts (selecting a Proxy Account)

For accounts that are set up for multiple users and one designated user who can submit samples in the name of other users the proxy account screen will open after the login see Figure 40.

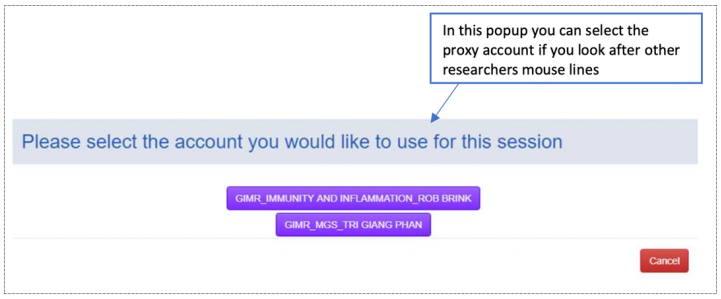


Figure 40: Proxy Account View

Account view

From the account view page, users will be able select from four presented options, and should select "New Mouse Genotype Manifest".

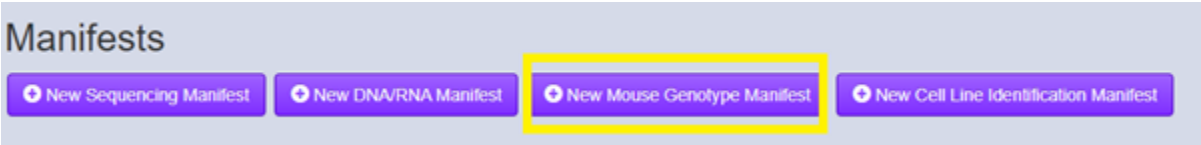


Figure 41: Selection of Mouse Genotyping

After selection, users will be presented with the following screen. From here the users must select "Container Type" in the dropdown window from either, '96 Well Plate/Rack' or 'Single tubes'. Users must also enter the number of samples they will be submitting.

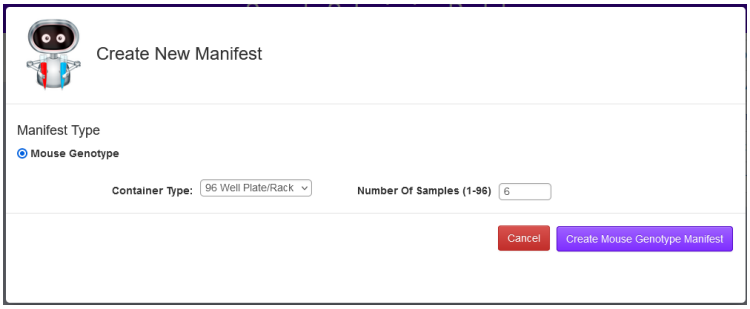


Figure 42: Creation of new manifest for Mouse Genotyping

Manifest page

Once "Create Mouse Genotype Manifest" is selected, clients will be presented with the following page:

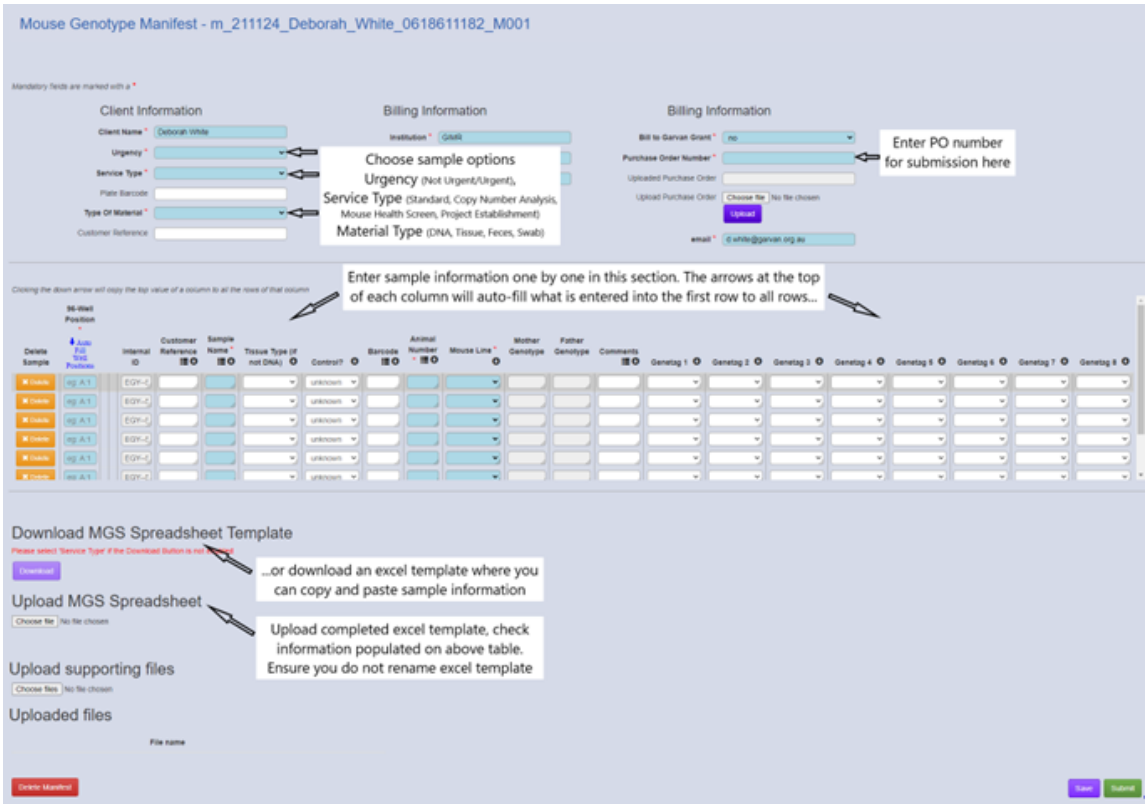


Figure 43: Mouse Genotyping new manifest page

Client Information

- The field called “Client Name” is a mandatory field and requires the entry of the name of the person who is entering the information and sending the Sample Submission Form (=Manifest) and requesting for the respective service.
- The “Urgency" field is mandatory and consists of two different dropdown menu options: "Not Urgent" and "48Hr (DNA) 72Hr (Tissue) - 2x price". An increase in the service fee is associated with selecting an urgency level. The standard turnaround time is 10 working days.
- The field called "Service Type" is a mandatory field consisting of a dropdown menu where clients may choose between: "Standard", "Copy Number Analysis", "Mouse Health Screening", "Mouse Health Screening Panel" and "Project Establishment" depending on which service is required.
- The field called "Plate Barcode" is a field where a barcode can be entered if the samples being submitted are contained within a barcoded 96-well plate.
- The field called "Type of Material" is a mandatory field consisting of a dropdown menu where clients may choose between: "DNA", "Tissue", "Swab", "Feces", "EAD" depending on submitted sample type.

Billing Information

- “Institution” is a field for entering the name of the university, institute or entity which employs the client who is submitting samples, this is automatically filled with the account institution.
- “Last Name” is a field for entering the last name of the client who is submitting samples, this is automatically filled with the account primary users first name.
- “First Name” is a field for entering the first name of the client who is submitting samples, this is automatically filled with the account primary users last name.
- In the field “Bill to Garvan Grant” the Garvan internal clients can choose in a dropdown menu either "yes" or "no", for External clients "yes" is the only option.
    - If the option "yes" is chosen the next field becomes “Grant ID” the client can choose in a dropdown menu one of the active grants from the list
    - If the option "no" is chosen the next field becomes "Purchase Order Number", with and option to upload the PO documents
- The field called “email” is a mandatory field it automatically enters the email address of the person who is logged in to the account. This email address will be used for all communication regarding the submitted samples. The software will use this email to send the result notification email, which contains the link for downloading the results after the completion of the examination and analysis of submitted samples. This email address will also be used for sending out invoices (generated monthly by the finance department).

Sample Information

- “96-Well Position” is the mandatory field for entering the location of the sample in a 96-well plate. Depending on the amount of samples defined in the previous screen there will be the same number of rows shown in the table below. There are two ways to enter the sample location. Either manually by writing the location in the format "letter:number" for example "A:1", "A:2" etc. or by using the automatic fill down arrow. This blue arrow down will fill the locations in a sensible way for the given amount of samples automatically starting from A:1. Filling these fields is mandatory for submission of the manifest and requires the entry of the location in the correct (above specified) format.
- “Internal ID” is a field that cannot be modified and shows the assigned internal lab number for GMG, automatically generated by the LIMS software.
- “Sample Name” is a mandatory field for entering the name of the sample that is submitted in the position shown in the field called "96-Well Position" for that plate or tube. Entry of names is restricted to letters and numbers and underscore ("_"). If other characters are entered the software will reject the submission and highlight the field for correcting action by the submitter. Clicking on the table icon on the top of the column opens a popup window into which the client can copy and paste sample names from Excel or Word. Clicking on the black arrow down on the top of the column fills downwards the entry of the top row into all rows below.
- "Animal Number" is a mandatory field in which the client must add the animal reference number for the sample.
- "Mother Genotype" and "Father Genotype" are fields in which clients may enter the genotype of the mother and father respectively for a sample.
- “Comments” is a field for entering information that is helpful for the DRES Service Operator to know or additional information for the sample that the client wants associated with the sample. This field is not mandatory and accepts any character, letter or number as entry.
- "Genetag X" is a field in which a client will enter the specific genetag or multiple genetags which are being genotyped for. If multiple genetags are being genotyped for, the client will use "Genetag 1" for one genetag, and "Genetag 2" for the other, etc.

Submission of Manifest.

There are three buttons to submit, save or delete the manifest. The green button called "Submit" submits the Manifest directly. After clicking this button there will be a popup window confirming the successful submission, which must be closed by clicking on the button called "OK". The button called "Save" will save but not submit the Manifest. To submit the Manifest later the Manifest must be selected from the account landing page, and then the button called "Submit" must be clicked. The button called "Create Spreadsheet" will create an Excel file, which contains all sample information of the Manifest and can be printed for adding as a printout to the sample submission or stored by the client for future reference. The button called "Delete" will delete the Manifest without saving nor submission.

Editing an Existing Mouse Genotyping Service Manifest

Account view

Once logged on the account opens in this view see Figure 44. In the account screen select from the saved manifests that manifest that you want to edit and by clicking it open it.

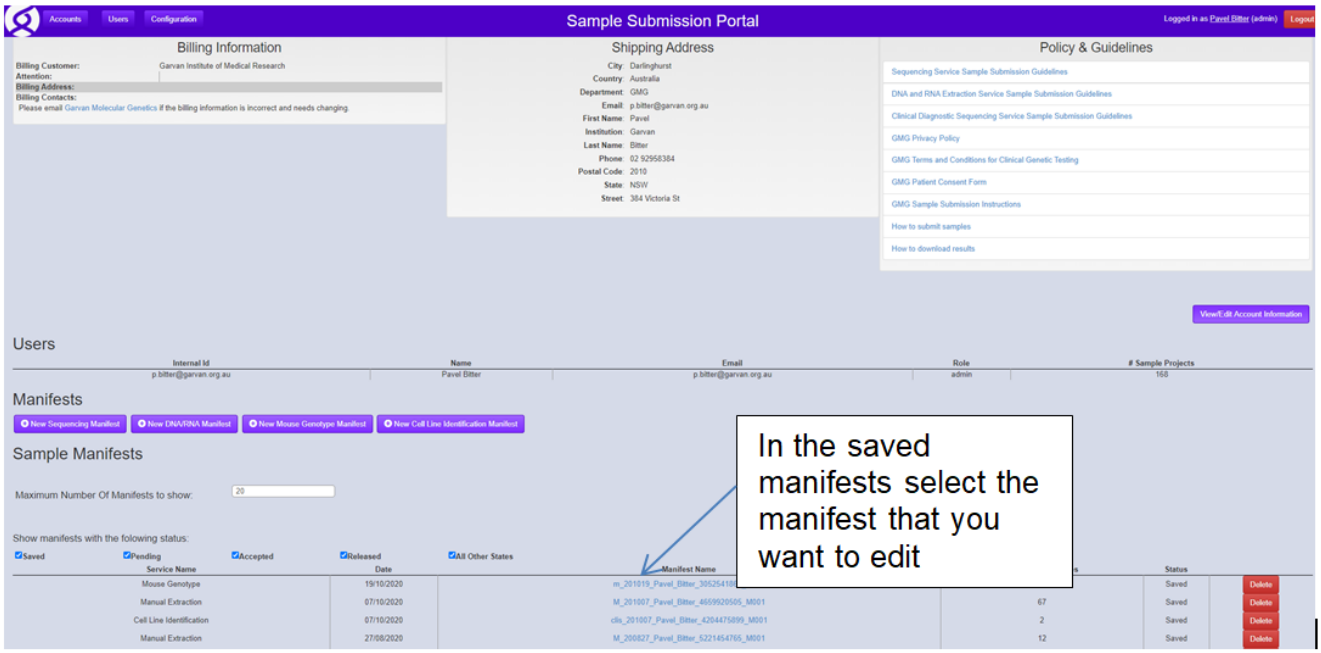


Figure 44: Account View

When the manifest is opened you can edit each sample manually or download the manifest and open in Excel to edit faster, see Figure 45.

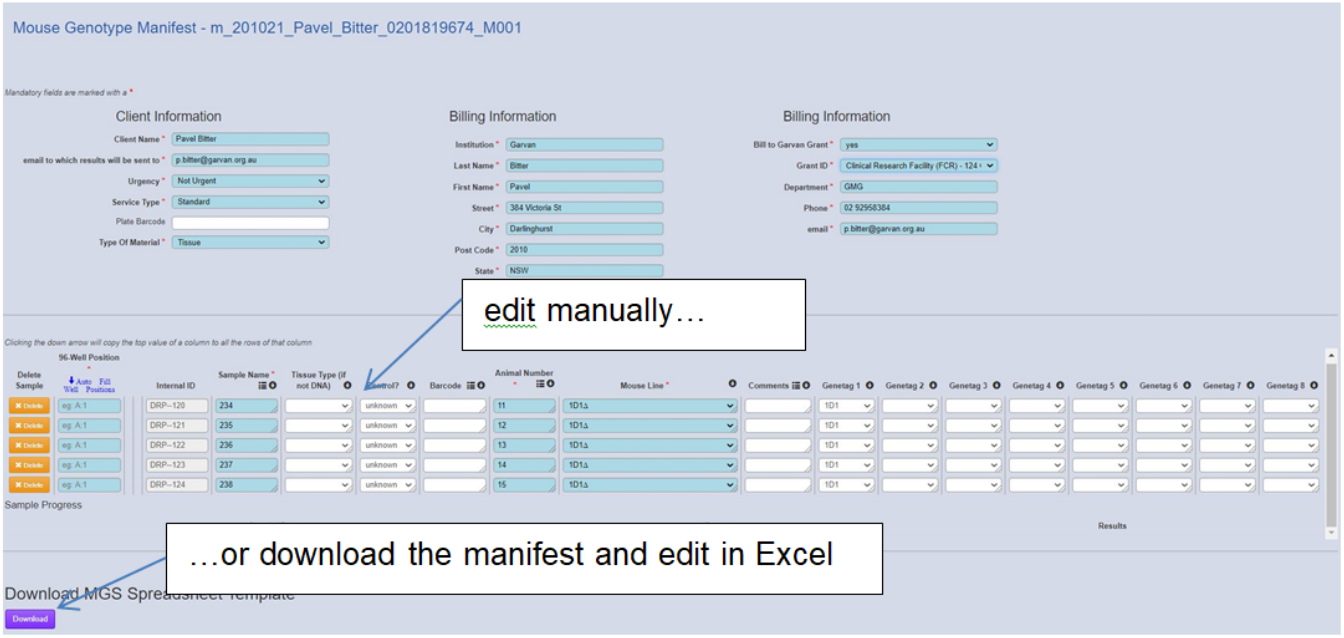


Figure 45: Edit functions for manifest

Downloading the template

Click on the button called “Download” to save a template file on the desktop. There will be a popup window asking you where you want to save the template file. Please don’t change the name of the template file. In the popup window click on the button called “Save” to save the file on your desktop. Then open this file in Excel, it will be populated with the information that comes from the Stuart software, see Figure 46.

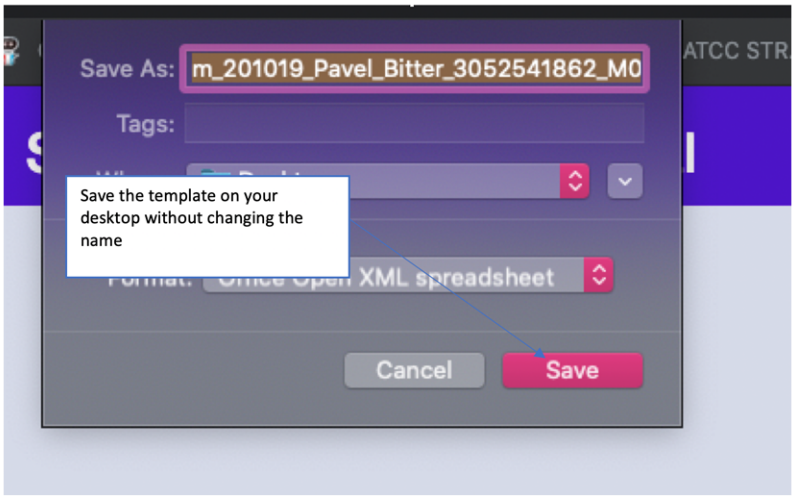


Figure 46: Saving template on Desktop

In the opened manifest select the genetag for each sample from the dropdown menu, see Figure 47.

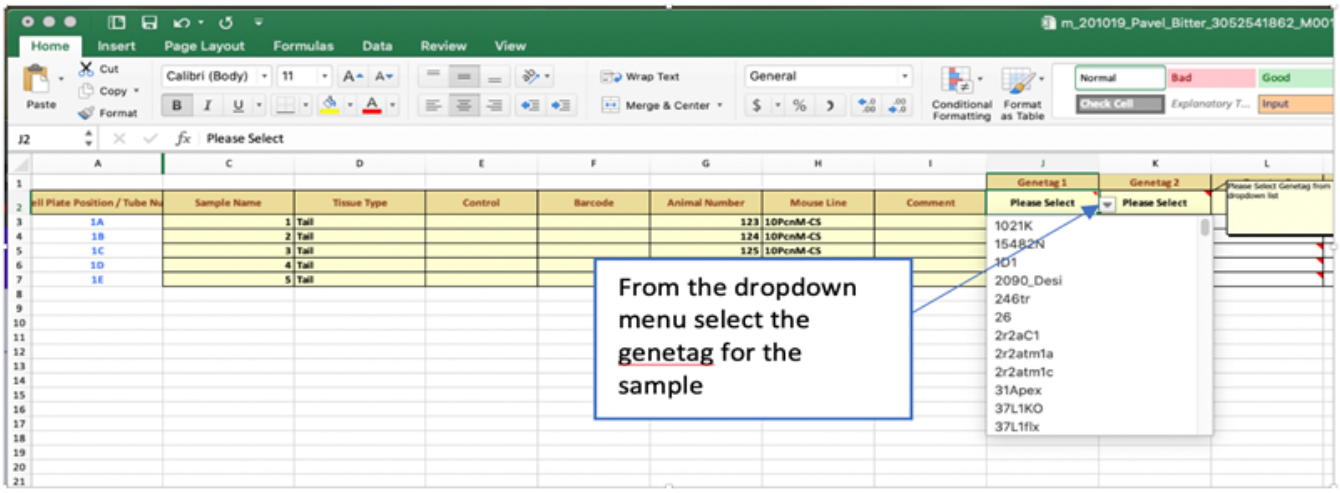


Figure 47: Selecting the genetag for each sample

Marking the Genetags for each sample with the letter “X” for all samples where this Genetag applies, see Figure 48.

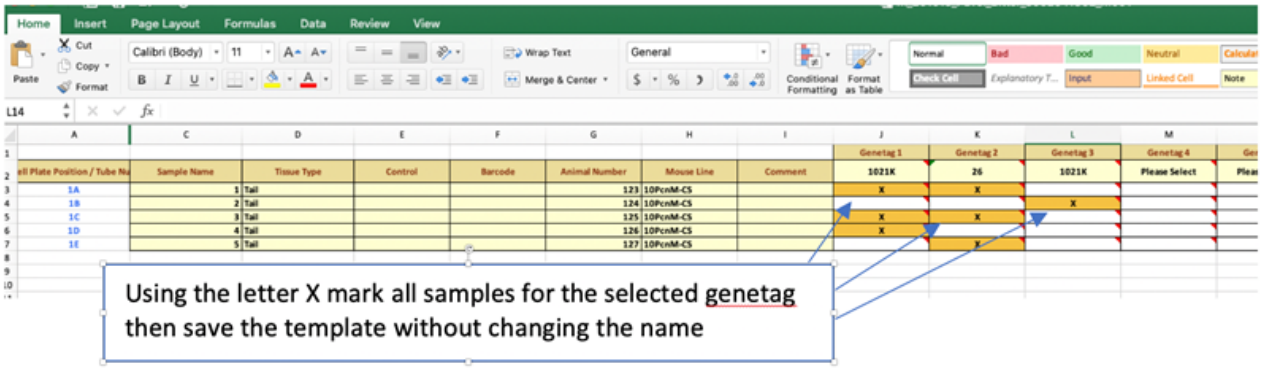


Figure 48: Marking samples with X to apply Genetags

Save the Manifest by clicking on the Save button in the menu (without changing the name of the file).

Uploading the edited template file

In the Portal use the button called “Choose file” to upload the edited template file, see Figure 49. There will be a popup window, see Figure 50, in which you confirm by clicking the button called “Open”.



Figure 49: Choose File button to upload edited template file

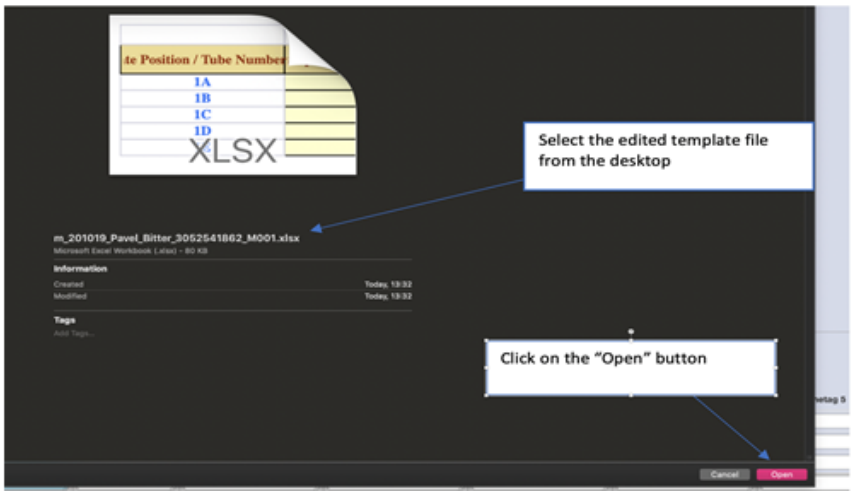


Figure 50: Click on Open to upload the edited template file

Use the Upload button in the Portal to upload the edited template file, see Figure 51.

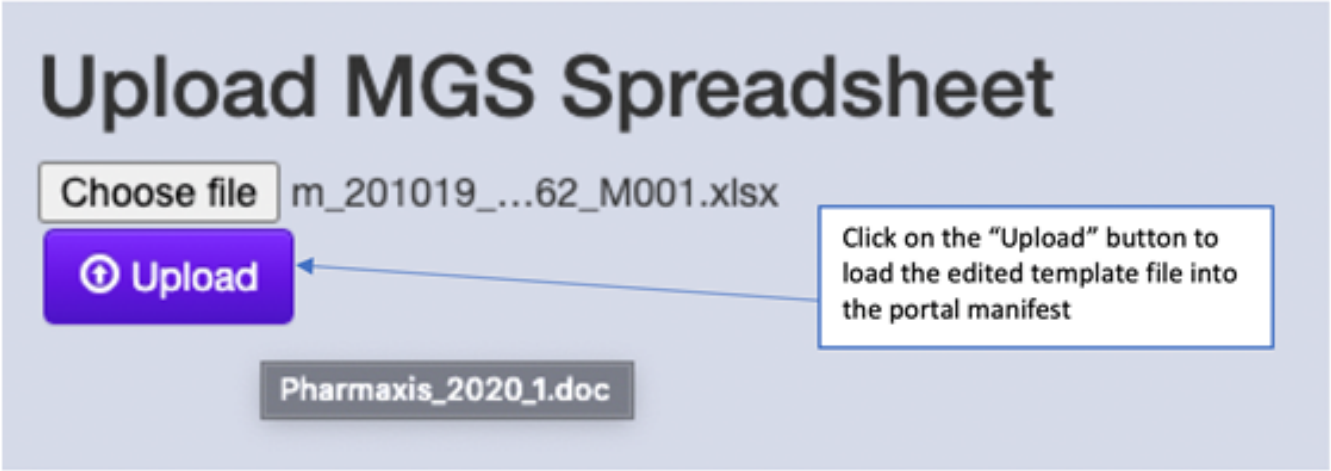


Figure 51: Clicking on the button called "Upload" to upload the edited template file

Confirm the upload by clicking on the button called "Close", see Figure 52.



Figure 52: Confirm the upload by clicking on “Close”

Check the correct upload and click on the button called “Save” (for later submission) or “Submit” for immediate submission of these samples to our service, see Figure 53.

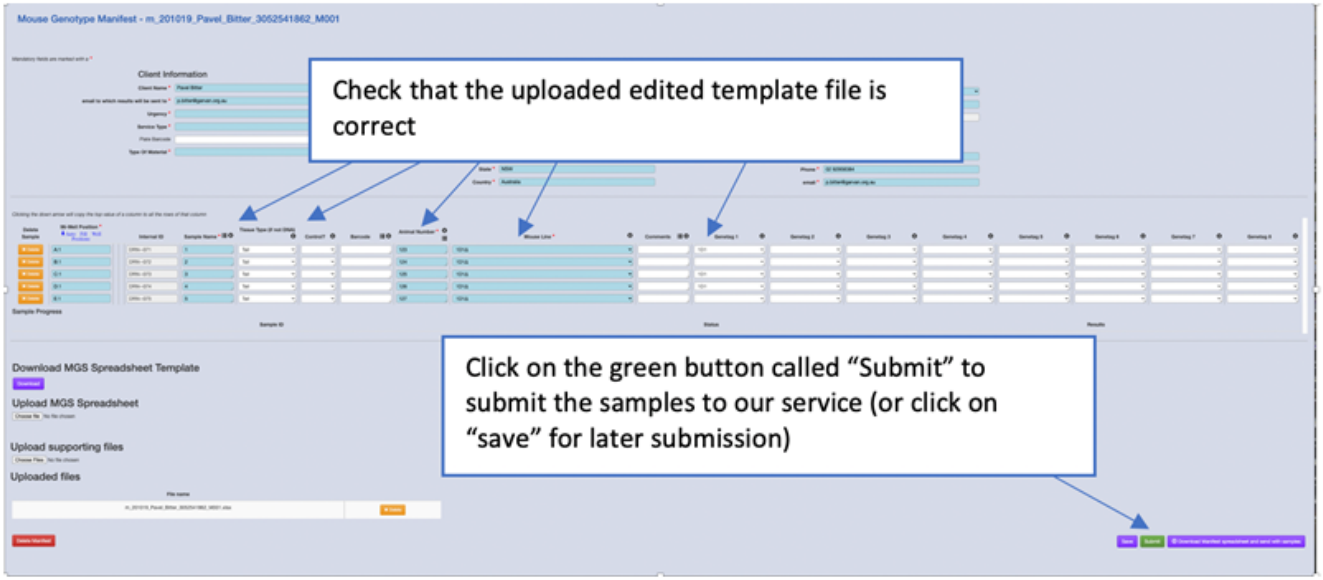


Figure 53: Submit samples by clicking on the button called “Submit”

After submission the edited template file will be checked and if there are no errors it will be accepted, there will be a completed action confirmation popup window, see Figure 54. This window is closed by clicking on the button called “ok”.

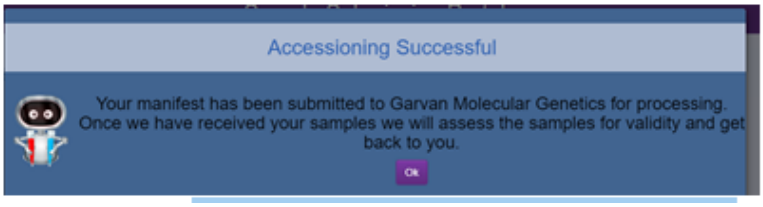


Figure 54: Popup window after submission

Cell Line Identification Analysis Sample Submission on MMGMS software

Once logged in, clients can access sample submission guidelines, the patient consent form, the privacy policy as well as terms an conditions of the GMG services. Clients can check the information in the Billing and Shipping Address fields and update if required by clicking on the button called "Edit Account Information" and updating the information in the consecutive popup window. Choose the button called "New Cell Line Identification Manifest", see Figure 55

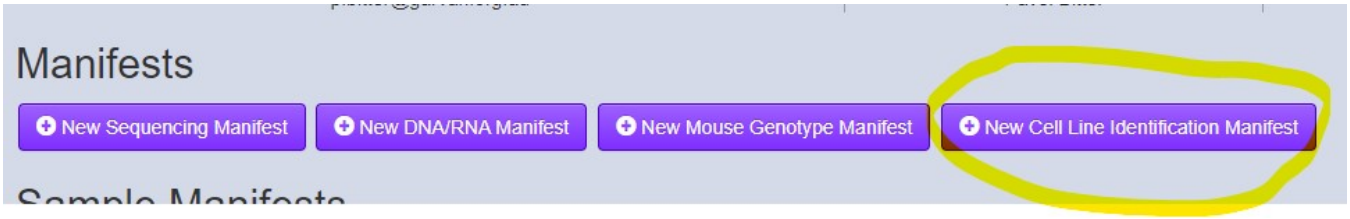


Figure 55: Selection options for creating a new manifest

When this button is clicked a popup window opens, see Figure 56. The Manifest Type is by default set to select the option called "Cell Line Identification". Either samples are submitted as a 96x well plate /Rack or in Single Tubes and clients can choose the container type accordingly in the dropdown menu. Finally, the number of samples that are submitted is selected in the field called "Number of Samples (1-96) from 1 to 96 samples. If clients want to submit more than 96 samples they need to submit a second (or more) Manifest(s). When the Container type is selected and the number of samples entered the button called "Create Cell Line Identification Manifest" will be accessible and needs to be clicked to close the popup window and enter the next Cell Line Identification window, see Figure 57.

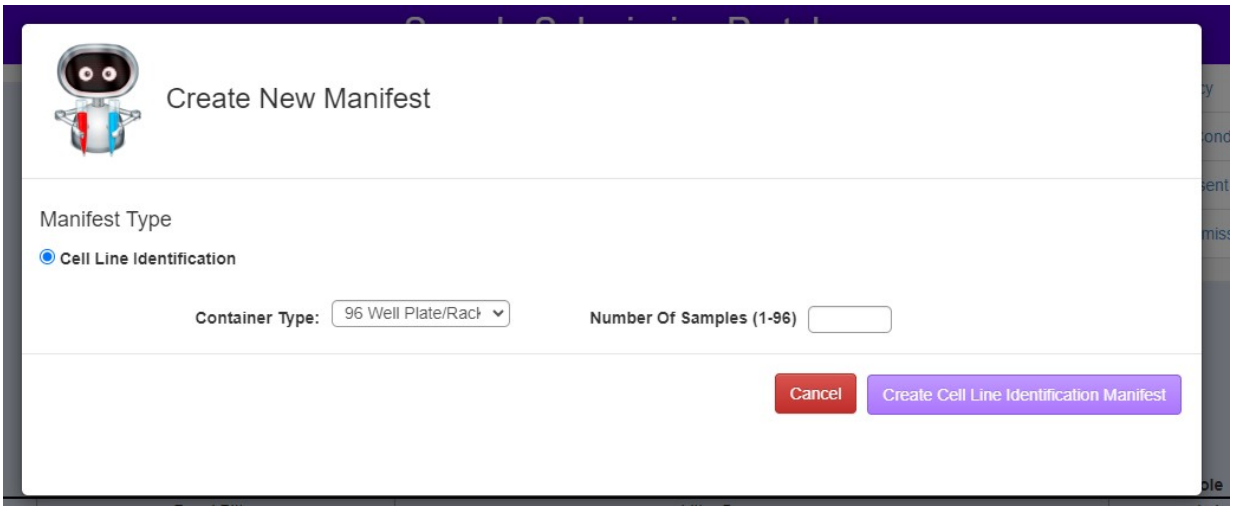


Figure 56: GMG Online Sample Submission Popup window for amount of sample entry

Following are the instructions for completing the online Sample Submission Form for requests for the Cell Line Identification service, see Figure 57:

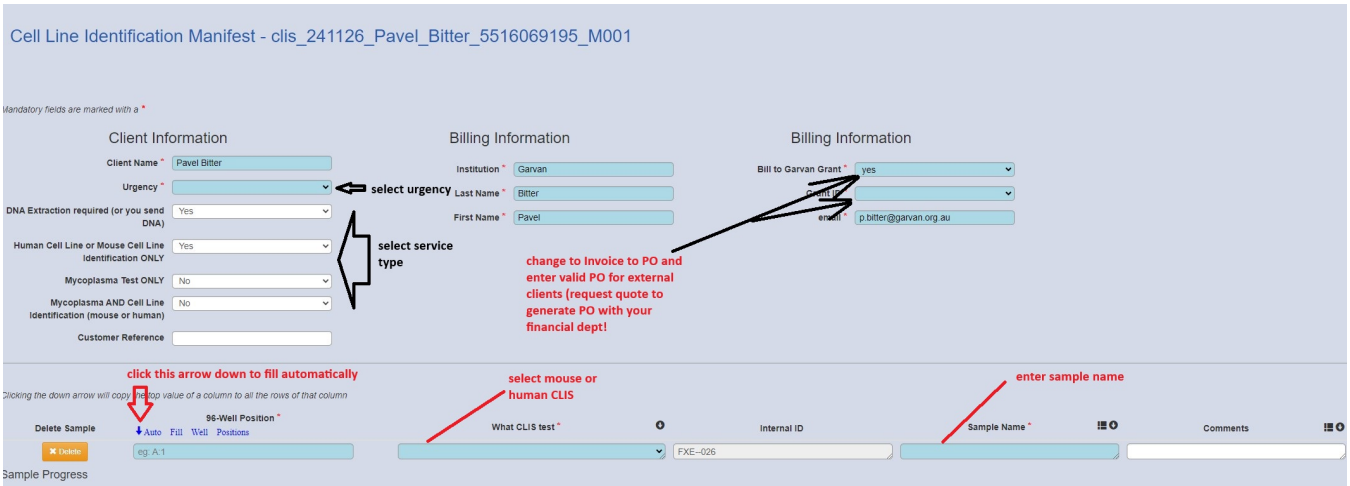


Figure 57: GMG Online Sample Submission main manifest entry window

Client Information

- The field called “Client Name” is a mandatory field and requires the entry of the name of the person who is entering the information and sending the Sample Submission Form (=Manifest) and requesting for the respective service.

- The field called “email” is a mandfatory field which asks for entering the email address of the person who is designated to receive the results (and who can be different to the person requesting for the respective service). This email address will be used for all communication regarding the submitted samples. The software will use this email to send the result notification email, which contains the link for downloading the results after the completion of the examination and analysis of submitted samples. This email address will also be used for sending out invoices (generated monthly by the finance department).
- The “Urgency" field is mandatory and consists of two different dropdown menu options: "Not Urgent" and "48Hr (DNA) 72Hr (Tissue) - 2x price". An increase in the service fee is associated with selecting an urgency level. The standard turnaround time is 10 working days.
- The field called "Human Cell Line or Mouse Cell Line Identification ONLY" is mandatory. It has a dropdown menu with the options called "Yes" or "No", depending if clients submit samples for Mycoplasma PCR only, then the option called "No" must be selected. If the Cell Line identification shall be performed without Mycoplasma PCR the option called "Yes" needs to be selected.
- The field called "DNA Extraction required (or you send DNA)" is mandatory. It has a dropdown menu with the options called "Yes" or "No", depending on whether Cells or DNA is submitted. Cells need DNA Extraction and the option "Yes" needs to be selected, DNA requires the selection of "No"
- The field called "Mycoplasma Test ONLY" is mandatory. It has a dropdown menu with the options called "Yes" or "No", depending if clients submit samples for Mycoplasma PCR then the option called "Yes" must be selected. If only the Cell Line identification test shall be performed without Mycoplasma PCR the option called "No" needs to be selected.
- The field called "Mycoplasma AND Cell Line Identification (mouse or human)" is manfatory. It has a dropdown menu with the options called "Yes" or "No", depending on if clients would like submitted samples to be processed as BOTH Mycoplasma and Cell Line identification. If clients would like both tests to be performed, then the option called "Yes" needs to be selected

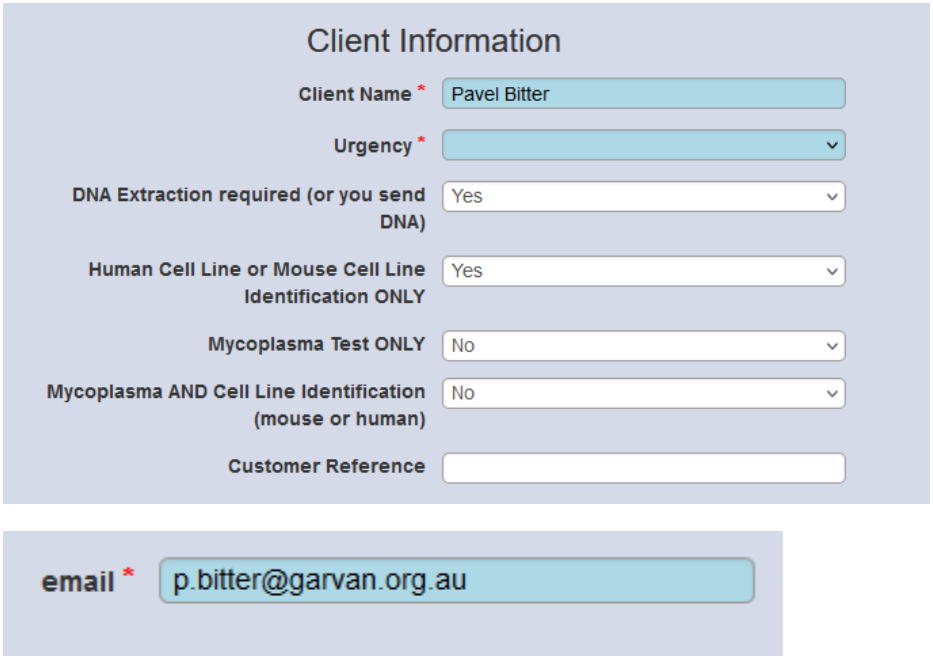


Figure 58: GMG Online Sample Submission Client Information entry window

Billing Information (all fields are mandatory)

- “Institution” is a field for entering the name of the university, institute or entity which employs the client who is submitting samples.
- “Last Name” is a field for entering the last name of the client who is submitting samples.
- “First Name” is a field for entering the first name of the client who is submitting samples.

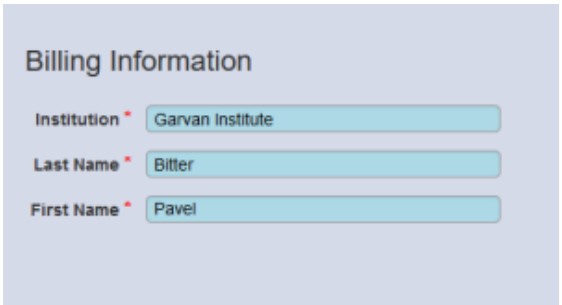


Figure 59: Billing Information fields concerning Name and Instituite

When the section labelled "Bill to Garvan Grant" is selected, a dropdown menu will appear with the options called "yes" and "no". If "yes" is selected, then the following option will appear:

- "Grant ID" is a mandatory field for entering the identification for the relevant Grant.

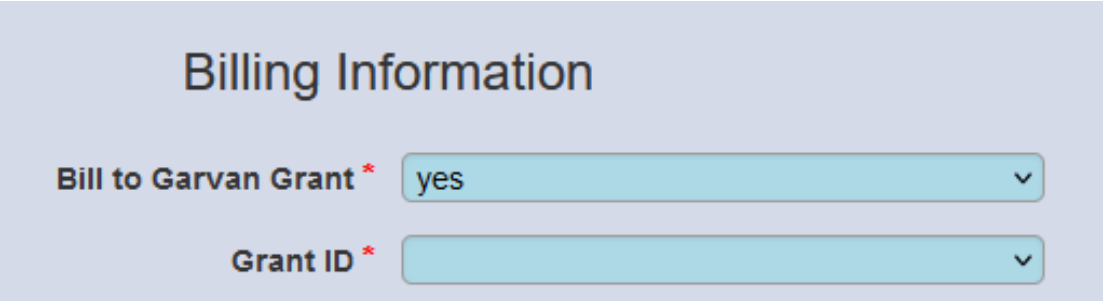


Figure 60: Billing information fields concerning Grant ID

If "no" is selected, the following option will appear:

- "Purchase Order Number" is a mandatory field for entering a valid Purchase Order Number received via quote from GMG.

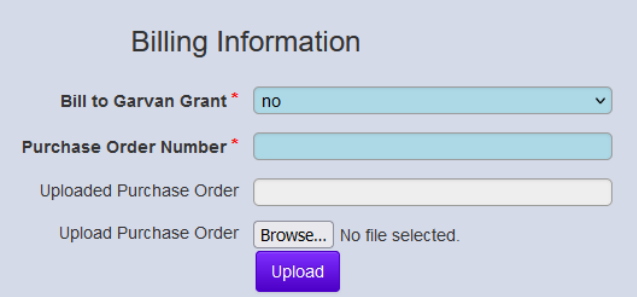


Figure 61: Billing information fields concerning Purchase Order Number

Sample Information (some fields are mandatory)

- “96-Well Position” is the field for entering the location of the sample in either tubes or 96-well plates. Depending on the amount of samples defined in the previous screen there will be the same number of rows shown in the table below. There are two ways to enter the sample location. Either manually by writing the location in the format "letter: number" for example "A:1", "A:2" etc. or by using the automatic fill down arrow. This blue arrow down will fill the locations in a sensible way for the given amount of samples automatically starting from A:1. Filling these fields is mandatory for submission of the manifest and requires the entry of the location in the correct (above specified) format.
- The field called "What CLIS test" has a dropdown menu, clients can choose from "Mouse CLIS", "Human CLIS", "Mycoplasma", "Human CLIS and Mycoplasma" and "Mouse CLIS and Mycoplasma", depending on which test they would like to be performed on the selected sample.
- “Internal ID” is a field that cannot be modified and shows the assigned internal lab number for GMG, automatically generated by the LIMS software.
- “Sample Name” is a field for entering the name of the sample that is submitted in the position shown in the field called "96-Well Position" for that plate or tube. Entry of names is restricted to letters and numbers and underscore ("_"). If other characters are entered the software will reject the submission and highlight the field for correcting action by the submitter. Clicking on the table icon on the top of the column opens a popup window into which the client can copy and paste sample names from Excel or Word, see Figure 63 . Clicking on the black arrow down on the top of the column fills downwards the entry of the top row into all rows below.
- “Comments” is a field for entering information that is helpful for the Cell Line Identification Service Operator to know or additional information for the sample that the client wants associated with the sample. This field is not mandatory and accepts any character, letter or number as entry.

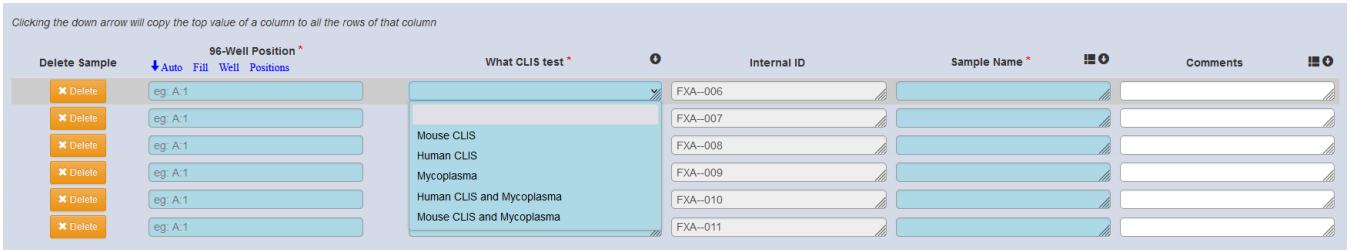


Figure 62: Selection of CLIS service

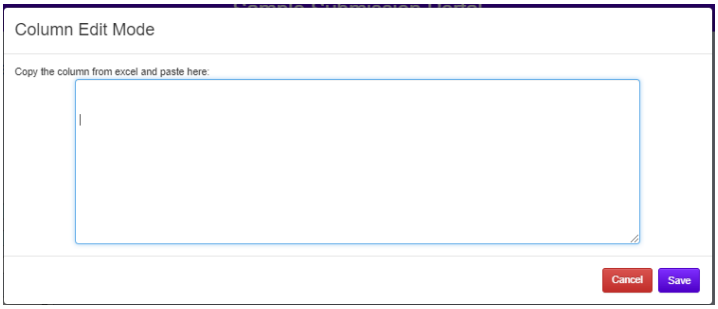


Figure 63: Sample info upload via excel

Submission of Manifest

There are three buttons to submit, save or delete the manifest. The green button called "Submit" submits the Manifest directly, see Figure 64. After clicking this button there will be a popup window confirming the successful submission, which must be closed by clicking on the button called "OK". The button called "Save" will save but not submit the Manifest. To submit the Manifest later the Manifest must be selected from the account landing page, see Figure 6
, and then the button called "Submit" must be clicked. The button called "Create Spreadsheet" will create an Excel file, see Figure 66, which contains all sample information of the Manifest and can be printed for adding as a printout to the sample submission or stored by the client for future reference. The button called "Delete" will delete the Manifest without saving nor submission.

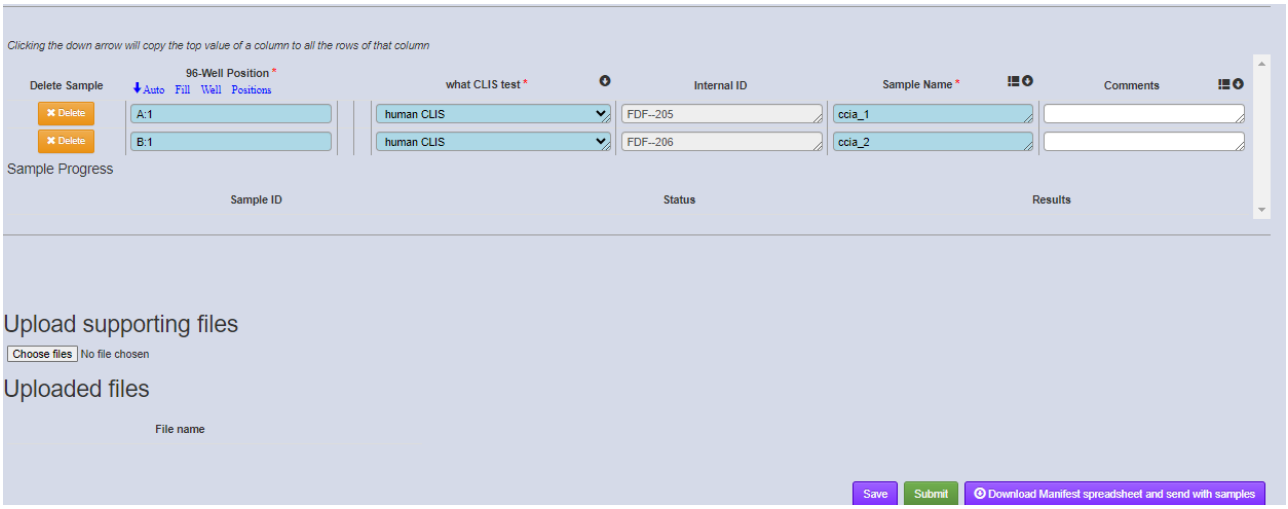


Figure 64: GMG Online Sample Submission Sample Information section

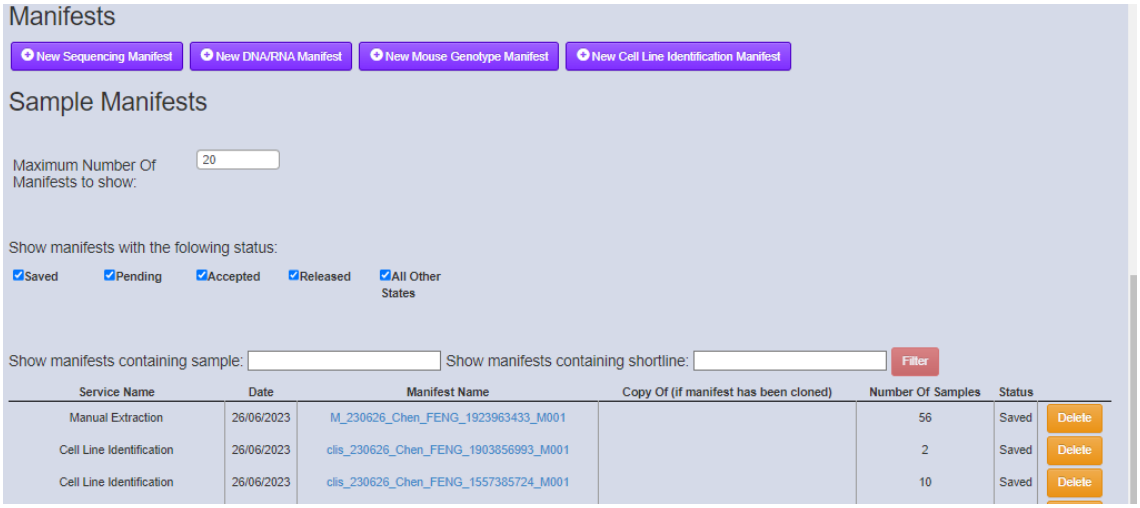


Figure 65: Manifest must be selected from the account landing page

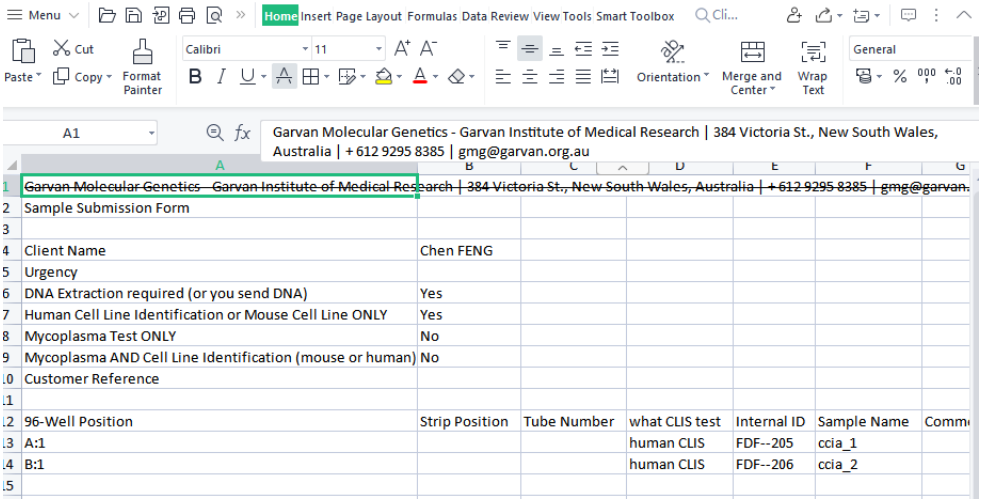


Figure 66: Example of Spreadsheet created by GMG LIMS

Manifest Management

Clients can view the status of their submitted sample manifests on the “Home” screen. Sample Manifests are shown in the lower half of the screen as either “Saved”, Deleted”, “Pending” or “Released”.

Saved Manifests

Saved Manifests have been saved but not submitted, see Figure 67 for an example. These manifests can be reopened by clicking on the manifest and then clients can continue completing the manifest and either save for a later submission or submit for these manifests to become a status “pending” manifest. As soon as the saved manifest is submitted it appears in GMG’s sample management software. Saved manifests can be deleted with the button called “Delete”. If the client chooses to click on the delete button a popup window will appear, see Figure 68. In the popup window the action of deleting a manifest can be either confirmed by clicking the button called “Delete” or cancelled by clicking the button called “Cancel”. After clicking either one of these two options the popup window will disappear.

Pending Manifests

Pending Manifests have been submitted, see Figure 67 for an example. These manifests are in progress in GMG’s sample management software. Pending manifests can be deleted with the button called “Delete”. If the client chooses to click on the delete button a popup window will appear, see Figure 68. In the popup window the action of deleting a manifest can be either confirmed by clicking the button called “Delete” or cancelled by clicking the button called “Cancel”. After clicking either one of these two options the popup window will disappear.

Deleted and Released Manifests

Deleted and Released Manifests can only be viewed, see Figure 67 for an example. These manifests are completed and cannot be altered after their completion. If clicked on the manifest it will open and show the content of the manifest, see Figure 69 for an example.

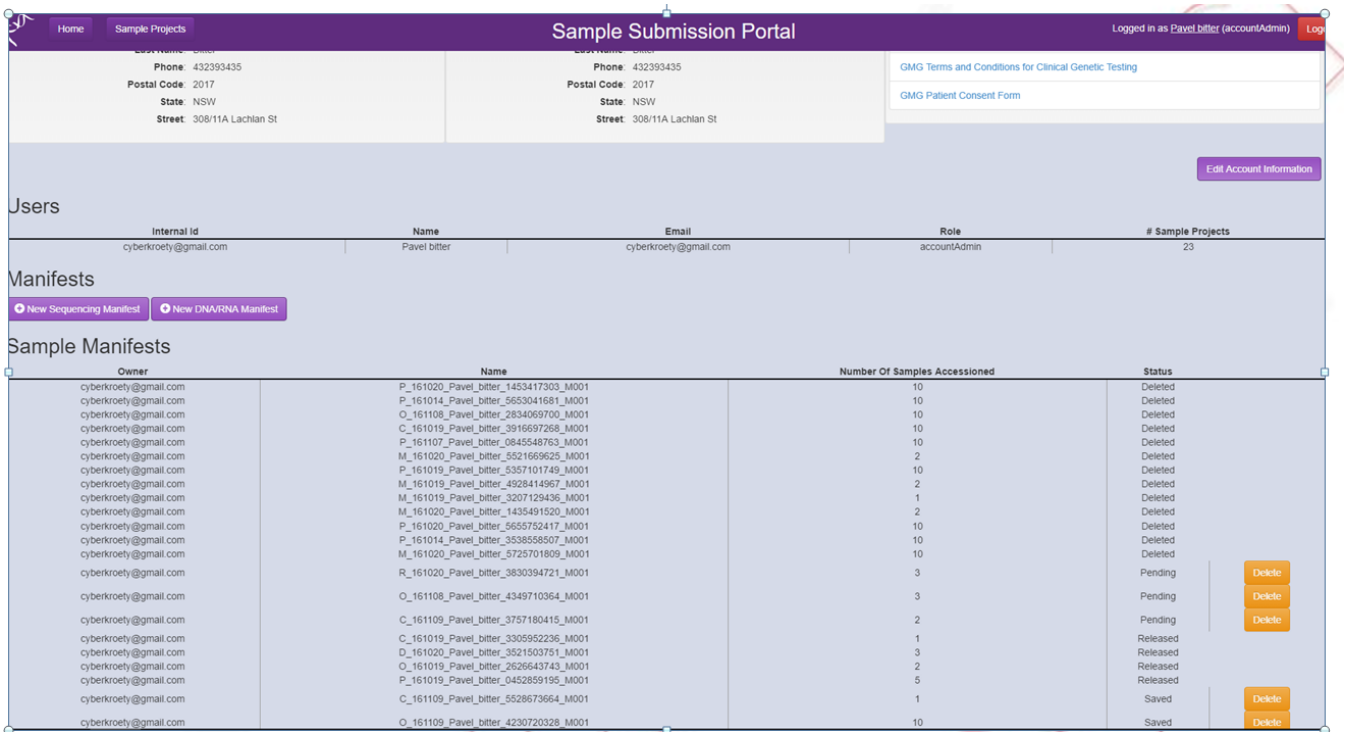


Figure 67: Sample Submission Portal Home Screen



Figure 68: Delete Popup Window

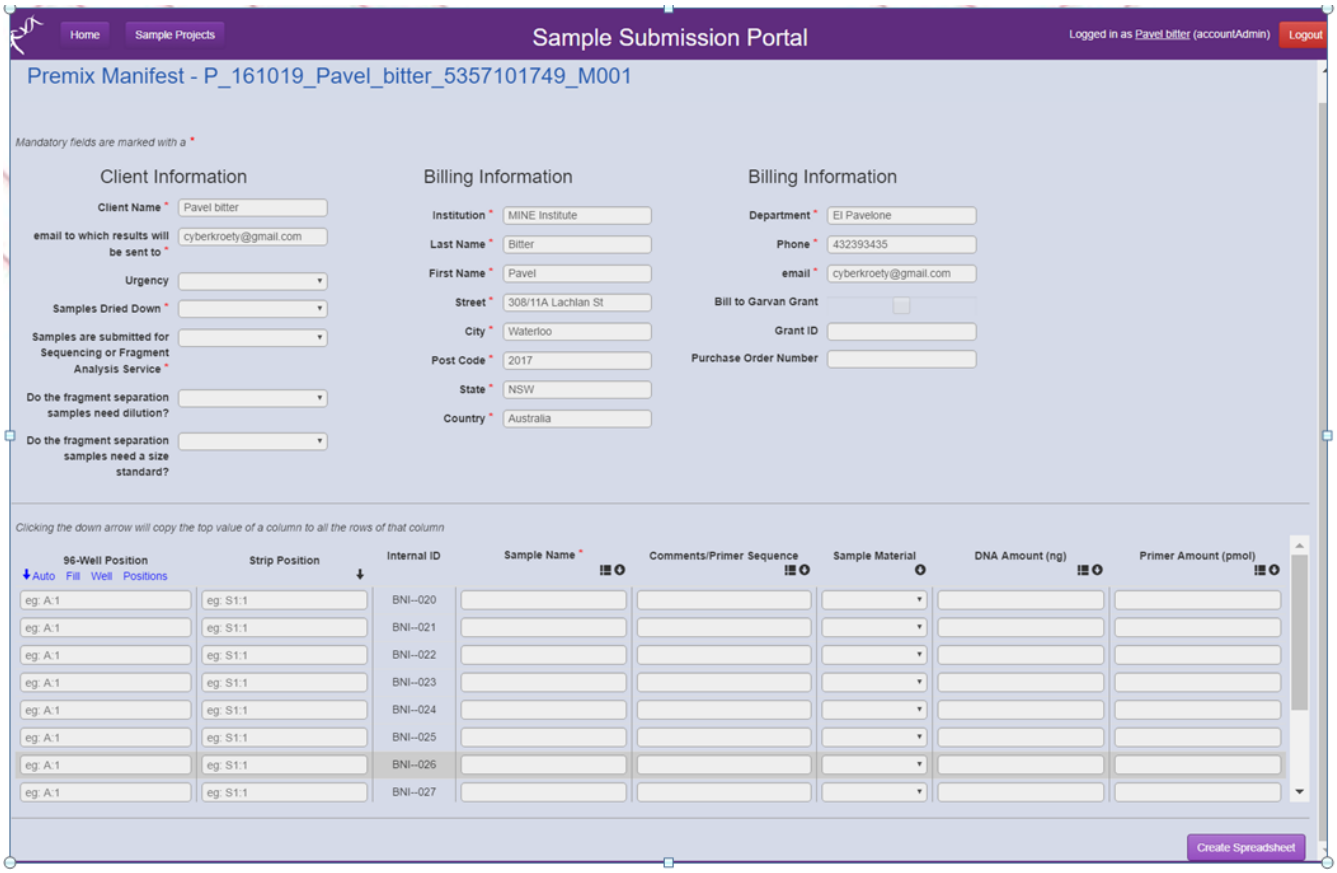


Figure 69: Example Manifest that was opened after a release status update

Download of Results for submitted samples

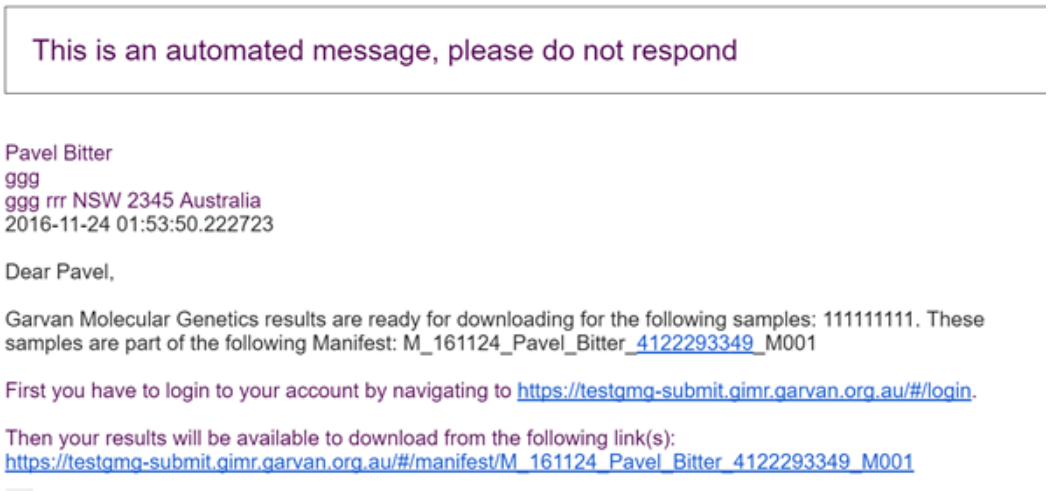
Once manifests have been progressed in the GMG Sample Management Software to the status of released clients get sent an automatic email to the nominated email address defined in their account. In this email is a link that enables clients to download the results for the submitted samples as a ZIP file. Sample Manifests are shown in the Home screen of the sample submission portal as “Released” and they have a green button called “View” which you can click to access the manifest to download the results, see Figure 70.



Figure 70: Home Screen with several manifest examples shown

Automatic email for released manifests

The software will send an automatic email to the nominated email address defined in their account that looks like Figure 71.There is a download results link in the email called “here”. If clicked the link directs to the sample submission portal.



This is an automated message, please do not respond

Pavel Bitter
ggg
ggg rrr NSW 2345 Australia
2016-11-24 01:53:50.222723

Dear Pavel,

Garvan Molecular Genetics results are ready for downloading for the following samples: 111111111. These samples are part of the following Manifest: M_161124_Pavel_Bitter_4122293349_M001

First you have to login to your account by navigating to https://testgmg-submit.gimr.garvan.org.au/#/login.

Then your results will be available to download from the following link(s):
https://testgmg-submit.gimr.garvan.org.au/#/manifest/M_161124_Pavel_Bitter_4122293349_M001

Figure 71: Automatic email for released manifests

Downloading results

When the manifest for which results shall be downloaded is opened the screen shows the information for the results and also contains a button called “Download All Results (zip)”, see Figure 73. If this button is clicked the software will create a ZIP folder in the client's download folder on the C: drive of their computer, see Figure 72 for an example. In this ZIP folder are the actual abi result files, the seq files with the sequence result as a text file and the summary of sample names and GMG IDs in an excel sheet.

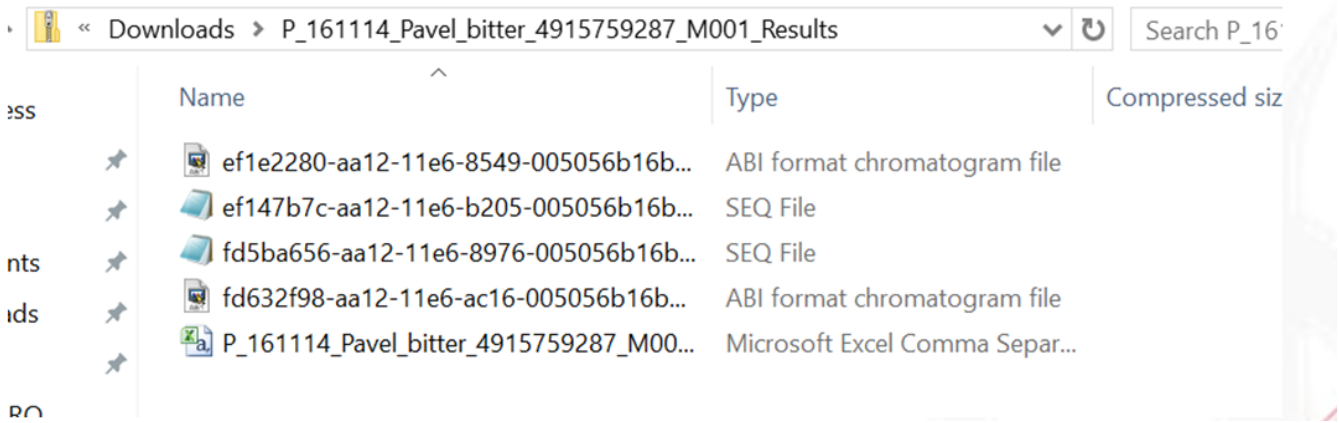


Figure 72: Example of file content of opened ZIP folder after download

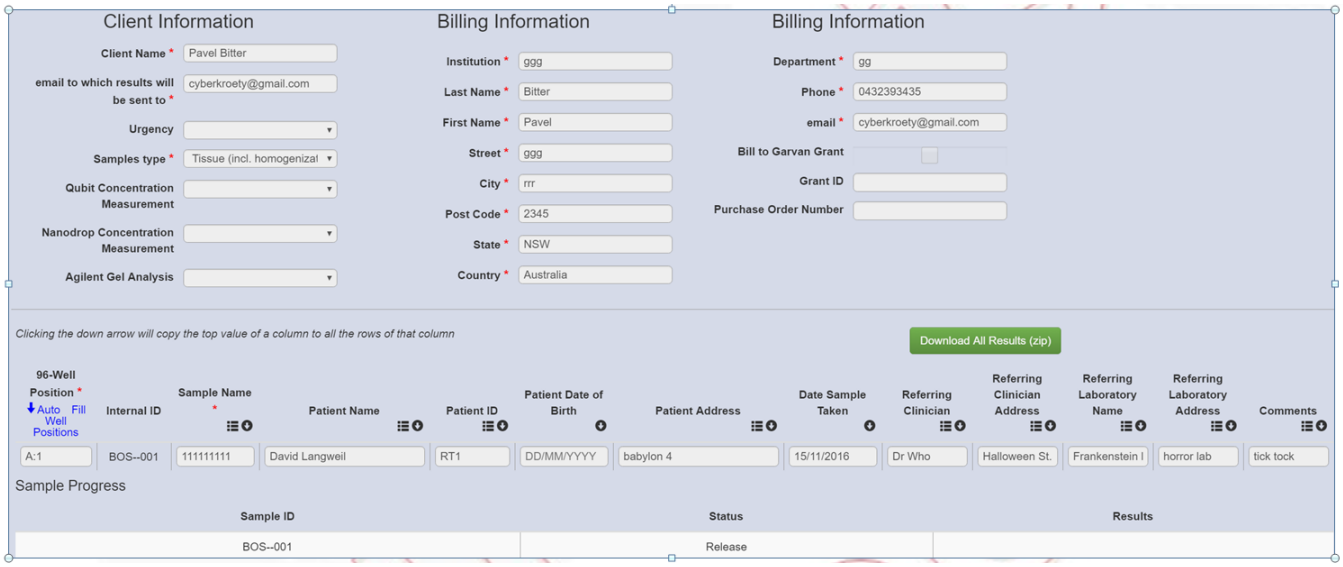


Figure 73: Manifest screen with button called “Download All Results (zip)”