How To Design Your Custom NGS Panel

nonacus

ADVANCING NON-INVASIVE HEALTHCARE

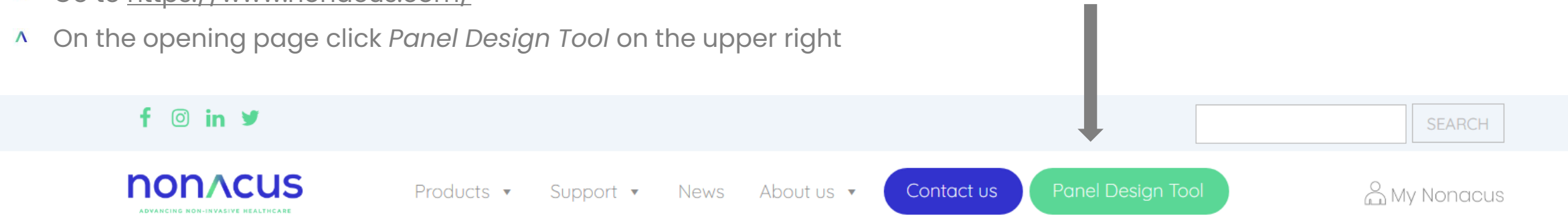
nonacus

Content

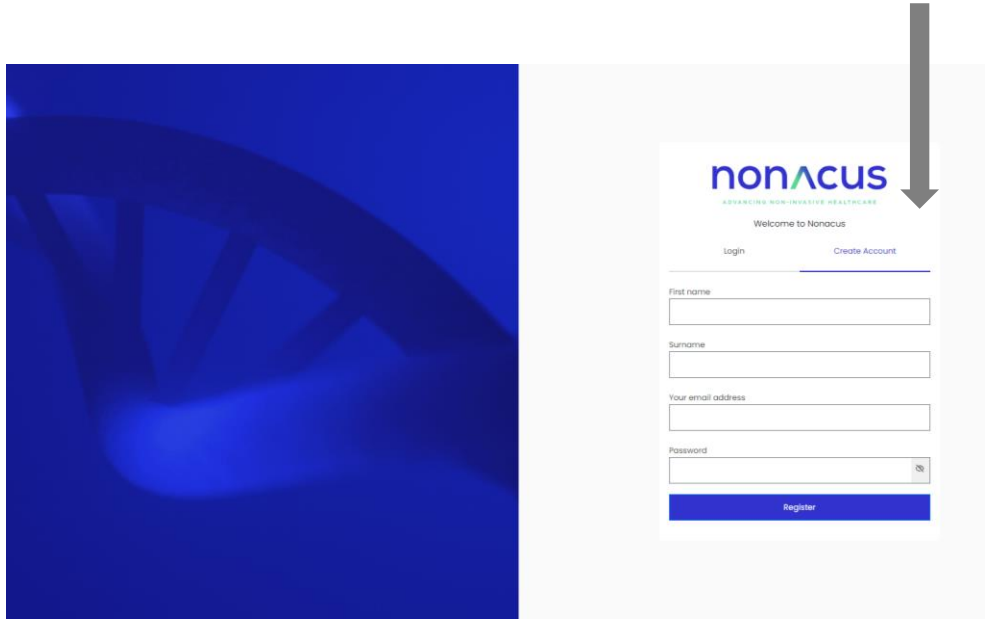
How to design your Custom NGS Panel

1. Create a Nonacus Account

- Go to https://www.nonacus.com/
- On the opening page click *Panel Design Tool* on the upper right



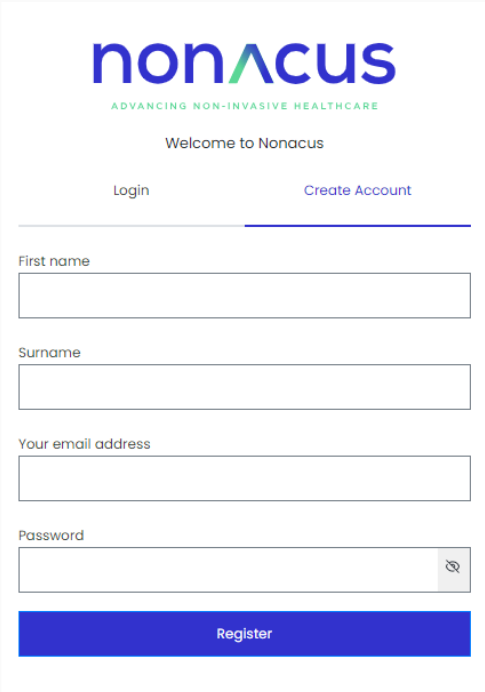
- Or alternatively, go direct to https://mynonacus.nonacus.com/
- Click 'Create Account'



How to design your Custom NGS Panel

1. Create a Nonacus Account

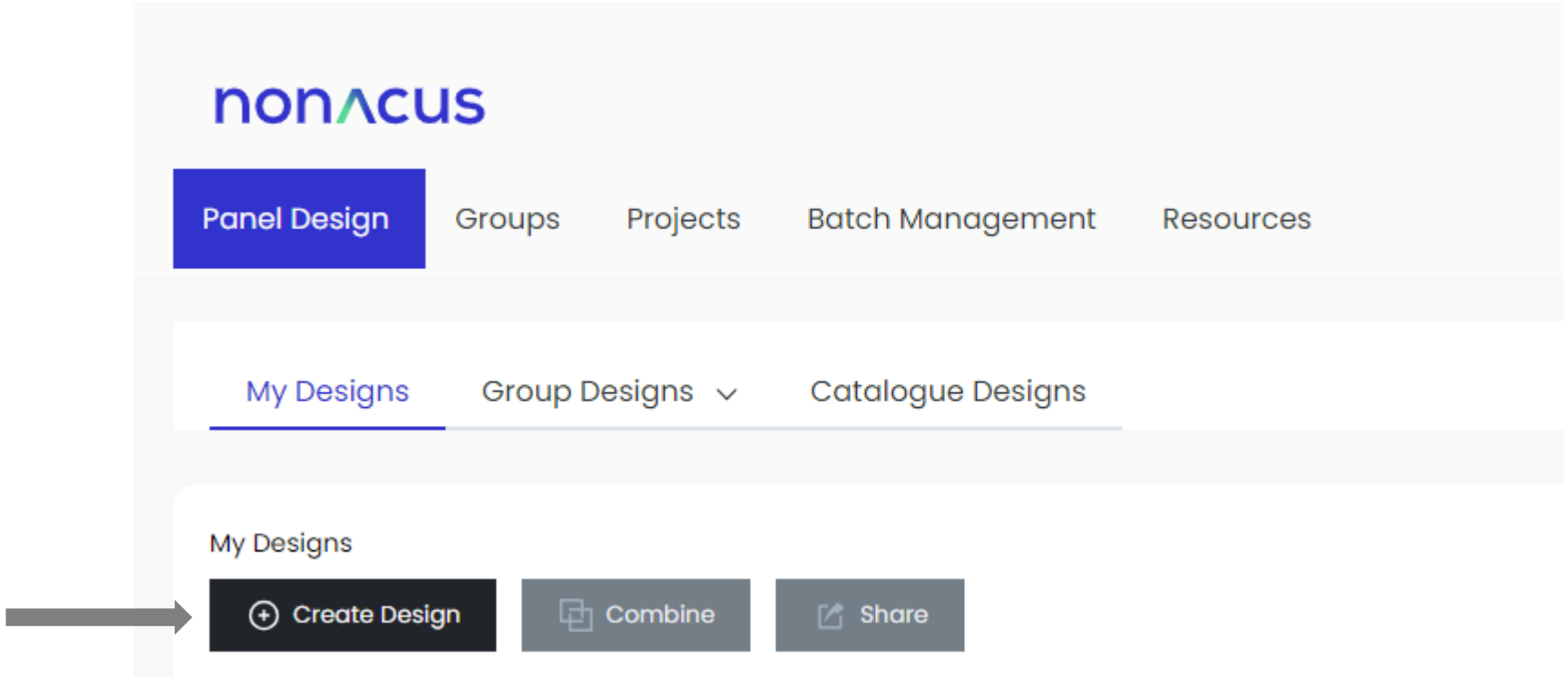
- Fill in First Name, Surname, professional email account, setup your own password and click Register



How to design your Custom NGS Panel

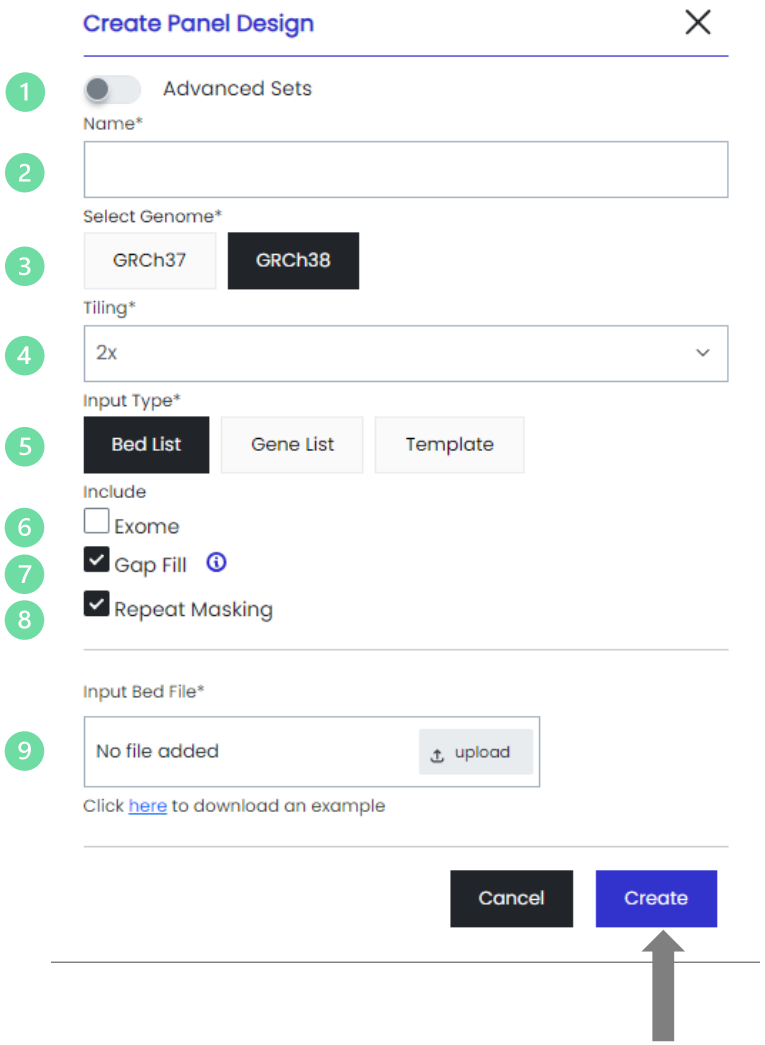
2. Create your own Custom NGS Panel

- After registration, click *Login*, enter your email address, password and click *Continue*
- On the Nonacus Probe Design Tool page, click *Create Design*



How to design your Custom NGS Panel

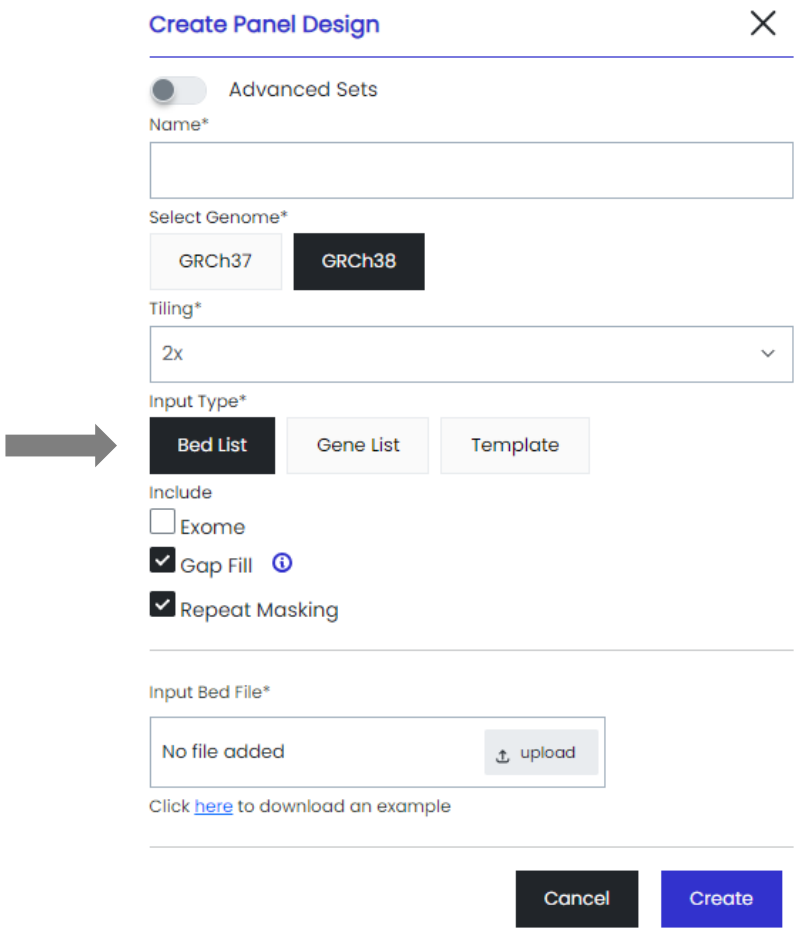
2. Overview of the 'Create Panel Design' page



1. 'Advanced' setting provides more tiling options if required.
2. Name your panel
3. Select the Genome Option (GRCh37 or GRCh38)
4. Tiling sets the preferred probe alignment/overlap
5. Select Input Type: BED list, Gene List or Template ('Template' allows a mix of genes and regions in a design).
6. Selecting Exome will choose validated probes from the Nonacus exome, that are appropriate for the Genes/Regions specified
7. Selecting Gap Fill will utilise validated probes from the Nonacus exome in drop out/masked regions.
8. Repeat Masking will mask difficult to target repetitive regions
9. Browse your input file

How to design your Custom NGS Panel

3. Create a Panel Design using a BED file

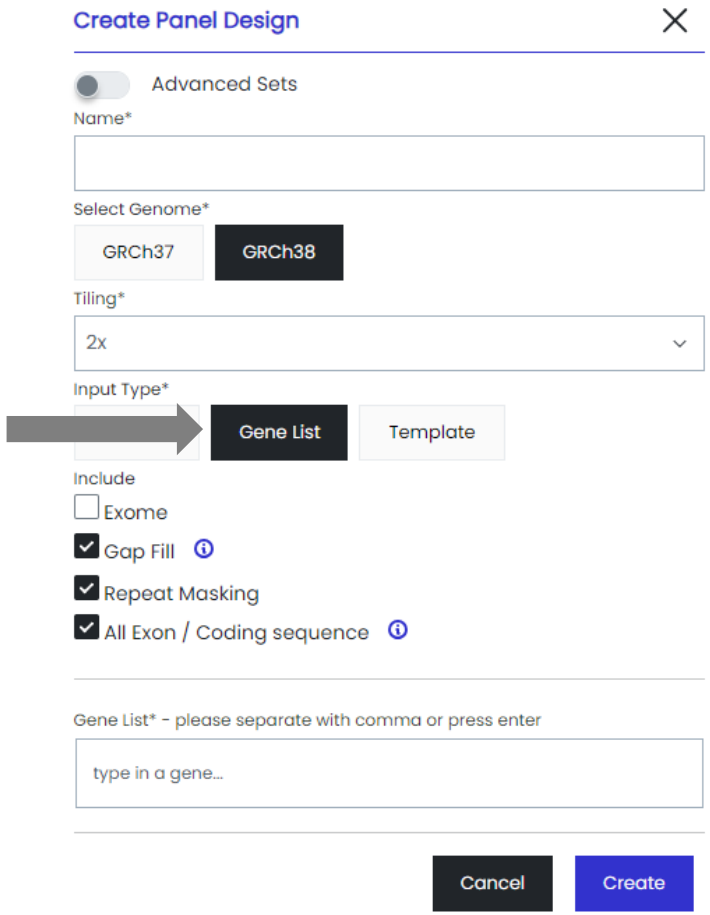


- Name your panel
- Select the Genome Option (GRCh37 or GRCh38)
- Select the preferred tiling
- Select Input Type: BED list
- Browse the file to upload it and click Create
- Note: Click here to download an example of a BED file

The design will be validated and an email will be sent explaining the next steps.

How to design your Custom NGS Panel

4. Create a Panel Design using a Gene List

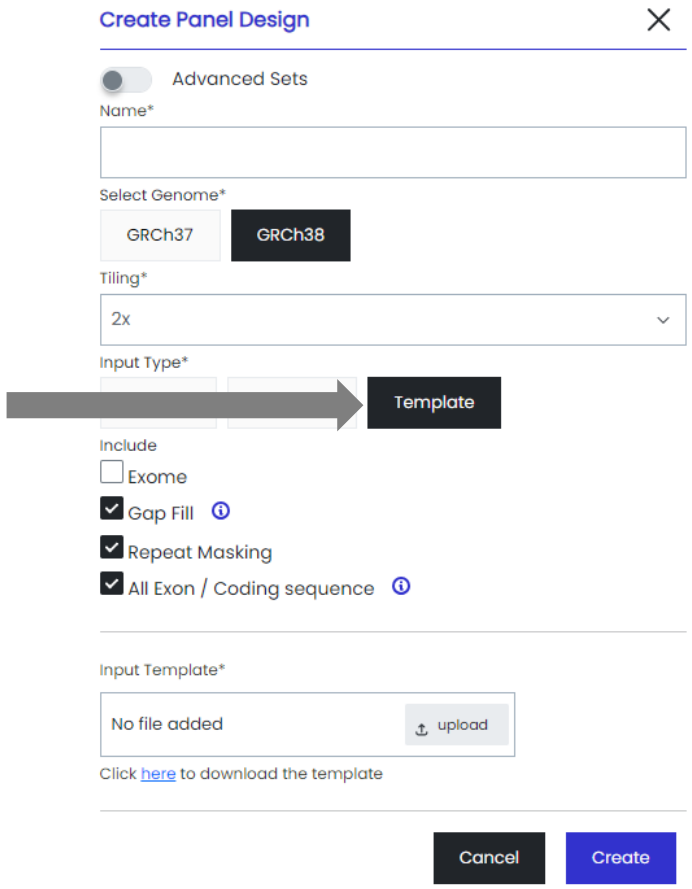


- Name your panel
- Select the Genome Option (GRCh37 or GRCh38)
- Select the preferred tiling
- Select Input Type: Gene List
- All Exon/Coding sequence: Select this toggle for coding sequence only, de-select for all exons including 3' and 5' untranslated regions
- Enter your list of genes in the Gene list box, one per line
- Click Add

The design will be validated and an email will be sent explaining the next steps.

How to design your Custom NGS Panel

5. Create a Panel Design using a Template File



A template file lets you specify a mixture of gene and regions in one file, enabling an easy way to specify sophisticated custom panels.

- Name your panel
- Select the Genome Option (GRCh37 or GRCh38)
- Select the preferred tiling
- Select Input Type: Template
- All Exon/Coding sequence: Select this toggle for coding sequence, de-select for all exons including untranslated region
- Browse the file to upload it and click *Add*

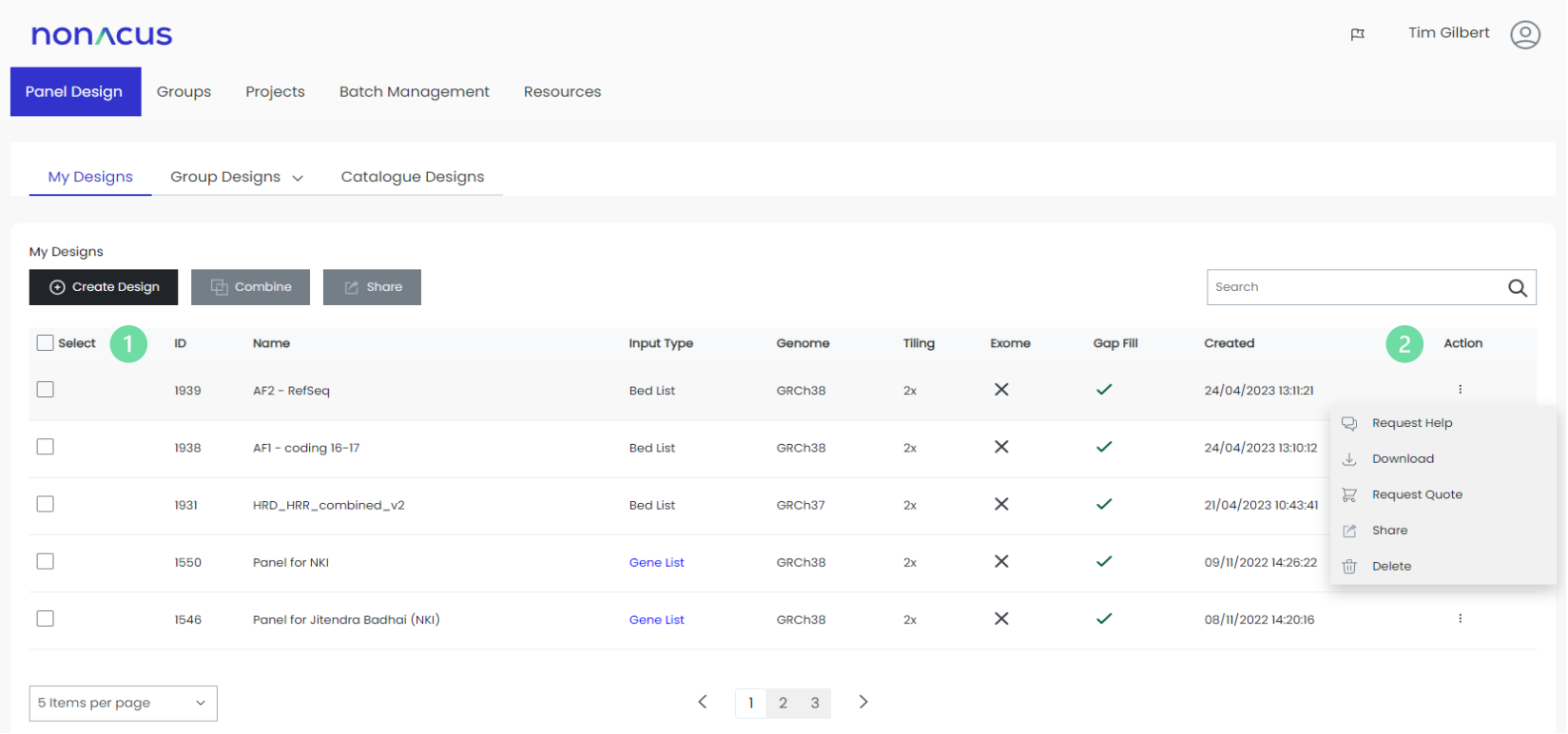
Note: Click *here* to download an example of a Template file

The design will be validated and a notification email will be sent explaining the next steps.

How to design your Custom NGS Panel

6. Downloading your Panel Design stats

Each panel design generates 3 BED files; covered regions, non-covered and target regions and a ‘design stats’ PDF which shows target coverage and probe information.



DESIGN REPORT
DESIGN INFORMATION
Design ID: XXXX
Design Name: XXXXXXXX
Genome Build: GRCh38

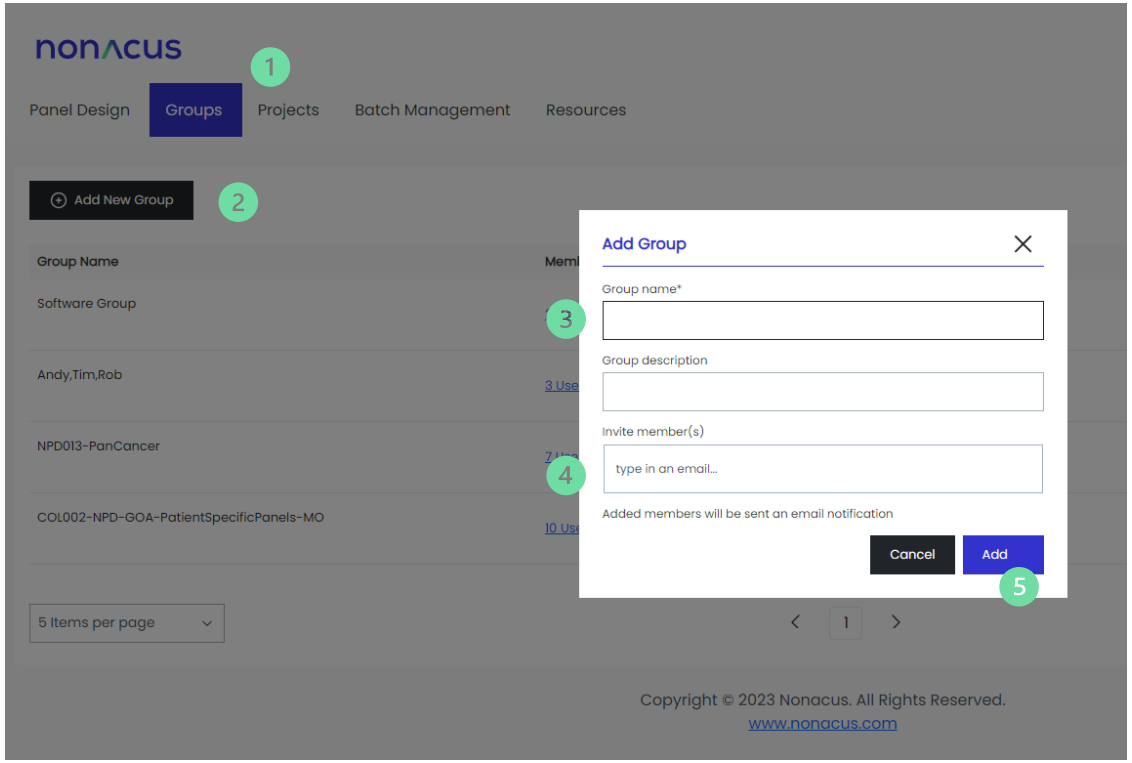
TARGET INFORMATION
Total Target Size (bp): XXXX
Number of Merged targets: XX

PROBE INFORMATION
Total Number of Probes: XXX
Total Covered Region (bp): XXXXXX
Total Covered (%): 100.0
Total Not Covered (%): 0.0

1. Find the panel you wish to view the design stats for
2. Click the Actions ellipsis ‘…’ and choose Download. Files will be downloaded to your ‘Downloads’ folder

How to design your Custom NGS Panel

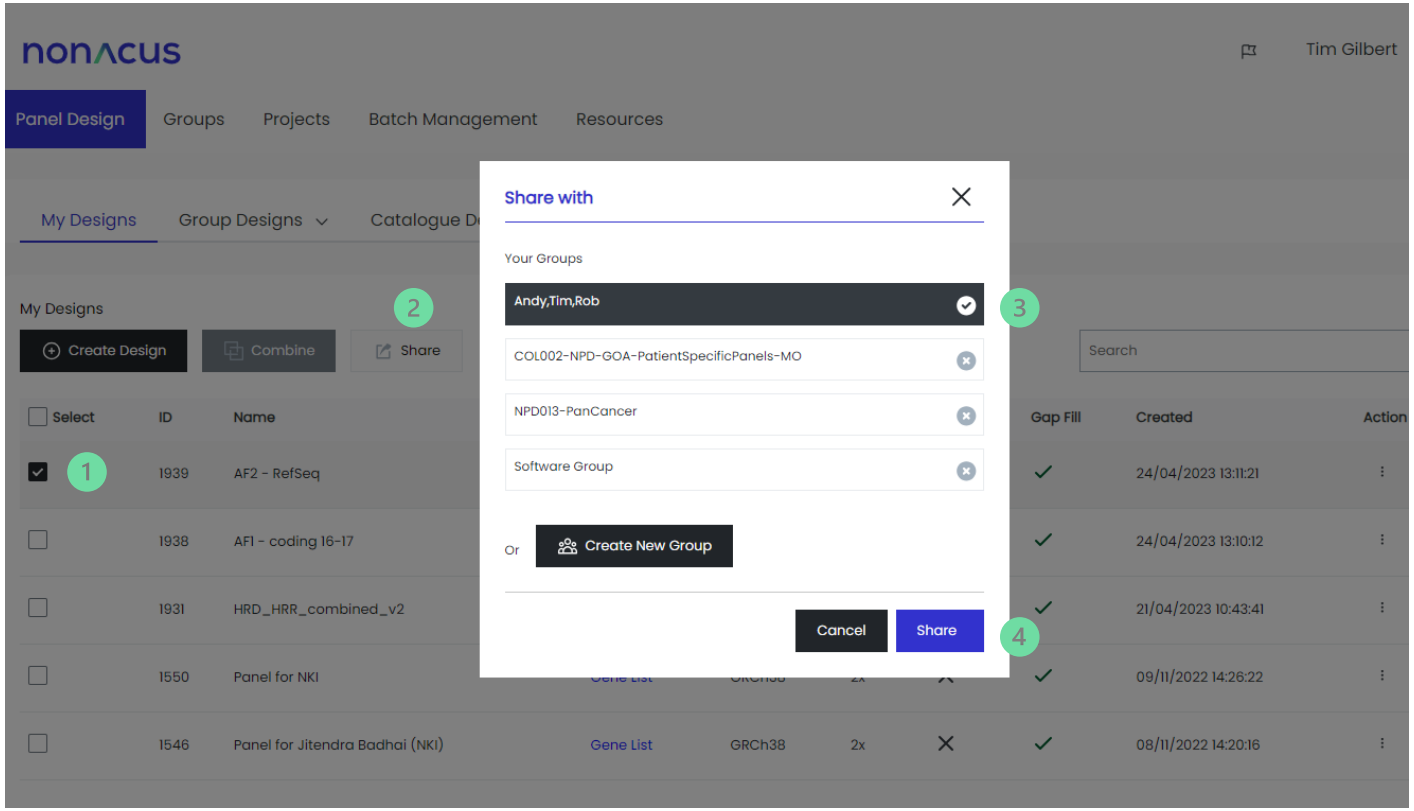
7. How to create a group to share your panel designs



1. Select the Groups tab
2. Click on ‘Add new group’
3. Give your group a name
4. Add each member’s email address
5. Click ‘Add’

How to design your Custom NGS Panel

7. How to share your panel designs



1. Select the panel(s) you wish to share
2. Click the share button
3. Select the group(s) you wish to share with
4. Click ‘Save’

An email will be sent to all the members of the group notifying them that a panel has been shared with them.

FAQs

nonacus

Q: Why has my design failed?

A: You may have entered an incorrect gene name (please check you are using NCI naming convention), if you entered a gene list, make sure its in the right format – ie a list not in a line. If none of these work, please contact tech support: support@nonacus.com

Q: How do I find out how well the design covers my regions?

A: A pdf file called 'design stats' which contains information about your panel including percentage coverage can be downloaded by clicking the Actions ellipsis associated with your panel.

Q: My coverage is less than 100% how do I find out which regions are missing?

A: Download the BED file labelled 'covered' for your panel design. The BED file can be found by clicking the Actions ellipsis associated with your panel.

Q: I have some really important regions missing from my design – how can I get these covered?

A: Our design algorithm automatically masks highly repetitive regions of the genome to improve panel success and prevent excess capture and sequencing cost associated with these regions. If you have a region important to your work that is being masked and preventing probe design across that region, please contact technical support (support@nonacus.com) who can help you improve coverage.

FAQs

nonacus

Q: How much will my panel cost?

A: You can request a quote by clicking the Actions ellipsis associated with your panel. We price panels based on the number of probes in the panel:

Catalogue number	Product Description	**Number of probes**
C3448CU	Cell3™ Target: Custom Panel, Tier 1 (48 samples)	10,000
C3496CU	Cell3™ Target: Custom Panel, Tier 1 (96 samples)	10,000
C3548CU	Cell3™ Target: Custom Panel, Tier 2 (48 samples)	20,000
C3596CU	Cell3™ Target: Custom Panel, Tier 2 (96 samples)	20,000
C3648CU	Cell3™ Target: Custom Panel, Tier 3 (48 samples)	50,000
C3696CU	Cell3™ Target: Custom Panel, Tier 3 (96 samples)	50,000
C3748CU	Cell3™ Target: Custom Panel, Tier 4 (48 samples)	100,000
C3796CU	Cell3™ Target: Custom Panel, Tier 4 (96 samples)	100,000

nonAcus

ADVANCING NON-INVASIVE HEALTHCARE