A guide to ordering and customizing Oncomine tumor specific panels with Ion AmpliSeq Designer

Ion Torrent™ Oncomine™ tumor specific panels are small (15–30 genes), curated panels with verified performance that complement the Ion Torrent™ Oncomine™ menu of assays. They provide an end-to-end solution for molecular profiling and clinical research of specific tumors (bladder, prostate, gastric, and others) from formalin-fixed, paraffin-embedded (FFPE) tissue samples.

ThermoFisher SCIENTIFIC

Panels focused for cancer research

On Ion AmpliSeq™ Designer, you will be able to order predesigned Oncomine tumor specific panels or customize them with Oncomine tumor specific panel stock genes. These genes have been verified for performance in an end-to-end solution for molecular profiling of these specific tumor types from clinical research FFPE samples.

The genes have been associated with tumor type as well as prevalence, known relevant evidence, and potential value for cancer research. The core panels are designed to be small, targeting only the most relevant research genes.

Additional associated research genes are available for each panel. And all panels can be customized with any of the Oncomine tumor specific stock genes.

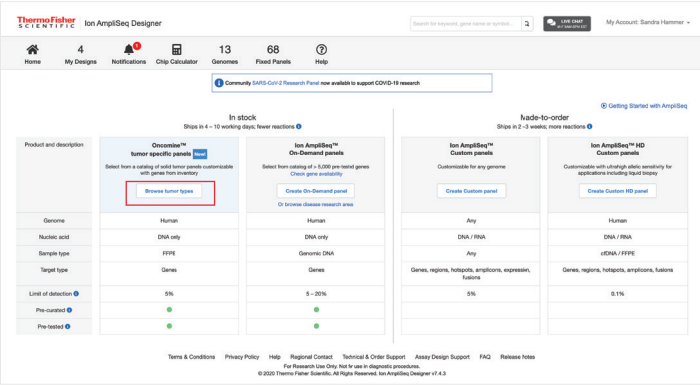
We also offer a 49-gene RNA panel that complements the Oncomine tumor specific panels; however, it is not available with the Ion Torrent™ Oncomine™ Lymphoma Panel. This RNA-only panel uses FusionSync technology to detect known, novel, and rare fusions from even small sample inputs.

In this guide, we will teach you how to order a panel and, if needed, how to customize a panel.

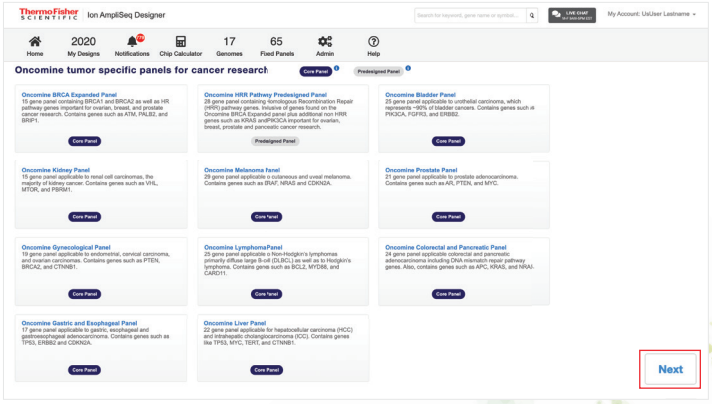
Ordering a panel

Step 1: Log in to Ion AmpliSeq Designer (**ampliseq.com**). After you log in, you will see four different types of panels.

Step 2: Choose the “Browse tumor types” button under Oncomine tumor specific panels.



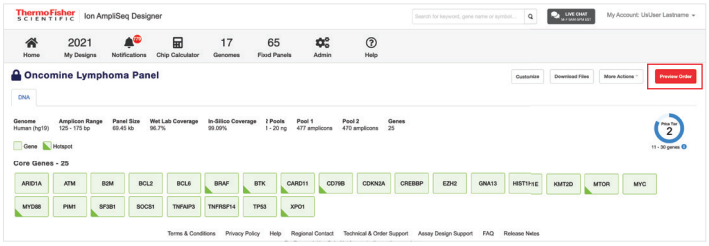
Step 3: Select the panel that you want to order and click the “Next” button in the lower-right corner of the screen.

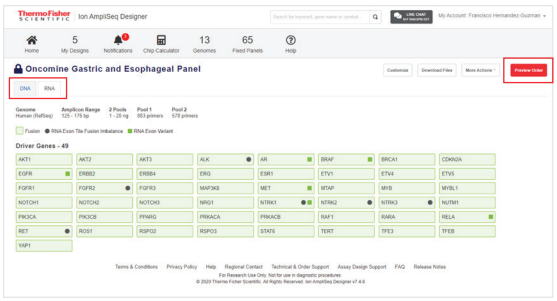


The following screens show the panel content. Compare the two panels and notice that one has an additional tab for RNA. This is the Ion Torrent™ Oncomine™ tumor specific RNA panel that complements Oncomine tumor specific DNA panels (available for all except the lymphoma panel).

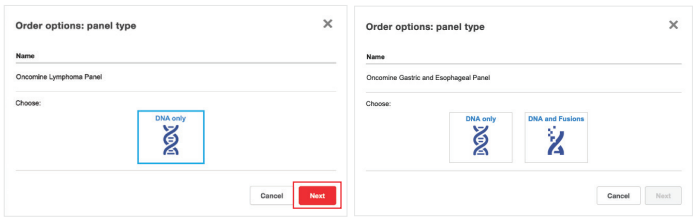
If you would like to customize the panel, then see the "Customizing a panel" section of this brochure (page 5).

Step 4: Click the "Preview Order" button in the upper-right corner of the screen.



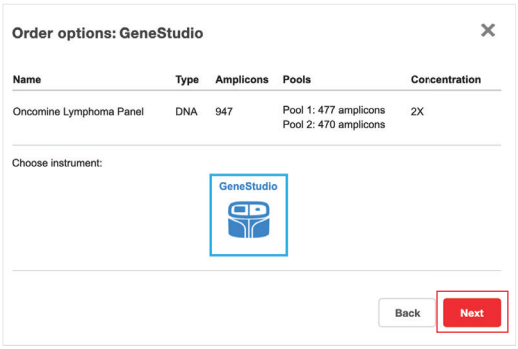


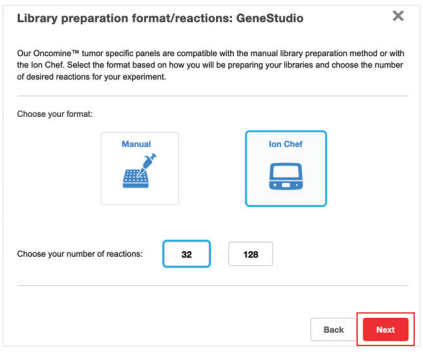
Step 5: Select your "Order options."



First is panel type. Most panels will have an option for "DNA and Fusions." A notable exception is the Oncomine Lymphoma Panel, as the complementary RNA panel is not available. For this panel, choose "DNA only" instead. Then click the "Next" button.

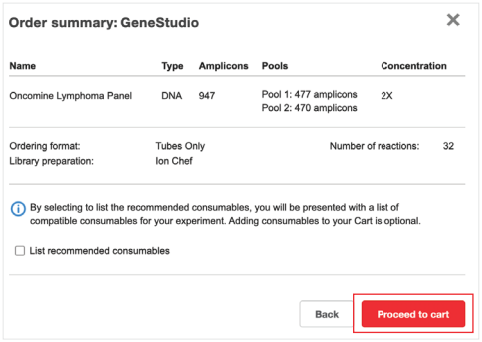
"GeneStudio" (Ion GeneStudio™ S5 instruments) will be your only instrument choice. Select it and click the "Next" button. Then choose your library preparation format and number of reactions. Make your selections and click the "Next" button.



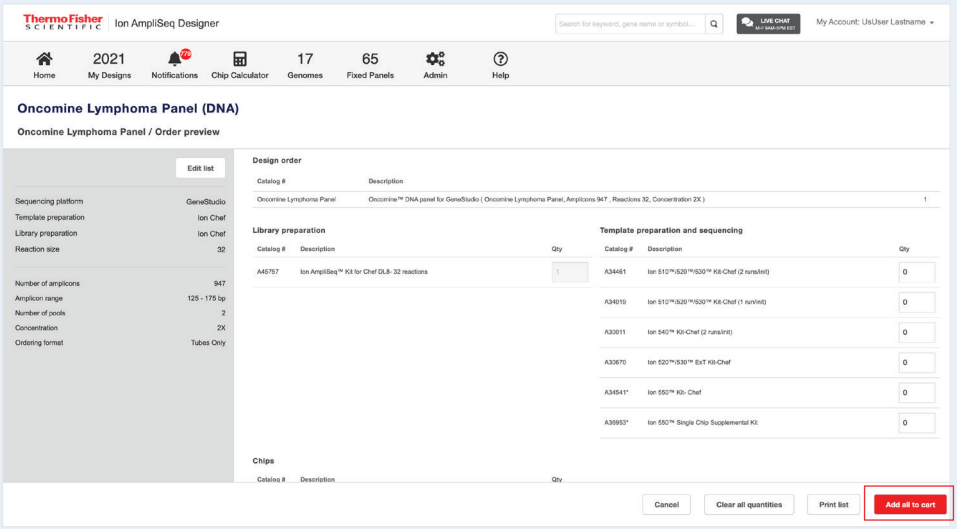


Note: Manual preparation has 3 reaction sizes (24, 96 and 384).

Step 6: Review your order summary. Check the box for "List recommended consumables" if you would like them listed in the next screen, and click the "Proceed to cart" button.



Step 7: Preview your order and add any recommended consumables. Click the red “Add all to cart” button* when ready to order on **thermofisher.com**.



* This functionality is not available in all countries. Your country may show “Request quote” or another message.

Step 8: In the last step, review your cart and click the “Proceed to checkout” button. In some countries, the last step may be reviewing your quote request. Please follow the on-screen prompts, which will be specific to your situation.

Customizing a panel for cancer research

If you would like to modify content while still maintaining performance, then you can add or remove Oncomine tumor specific stock genes. This also maintains the integrity of the bioinformatics workflow with some minor customizations.

Generally, there are two lists of genes: the core genes and the associated research genes. Both the core and associated research genes are considered Oncomine tumor specific stock genes that have been associated with a specific tumor type as well as prevalence, known relevant evidence, and potential value for cancer research.

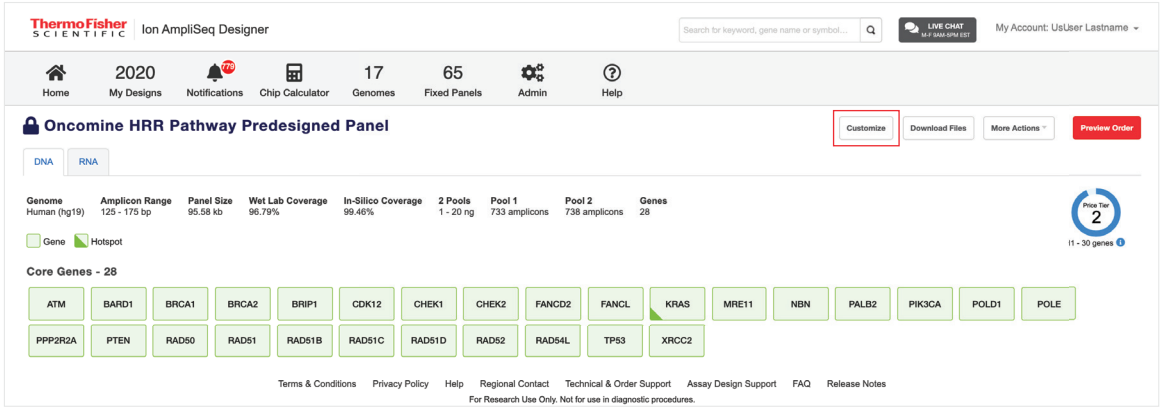
The interface makes it easy to customize the panel with a few cues:

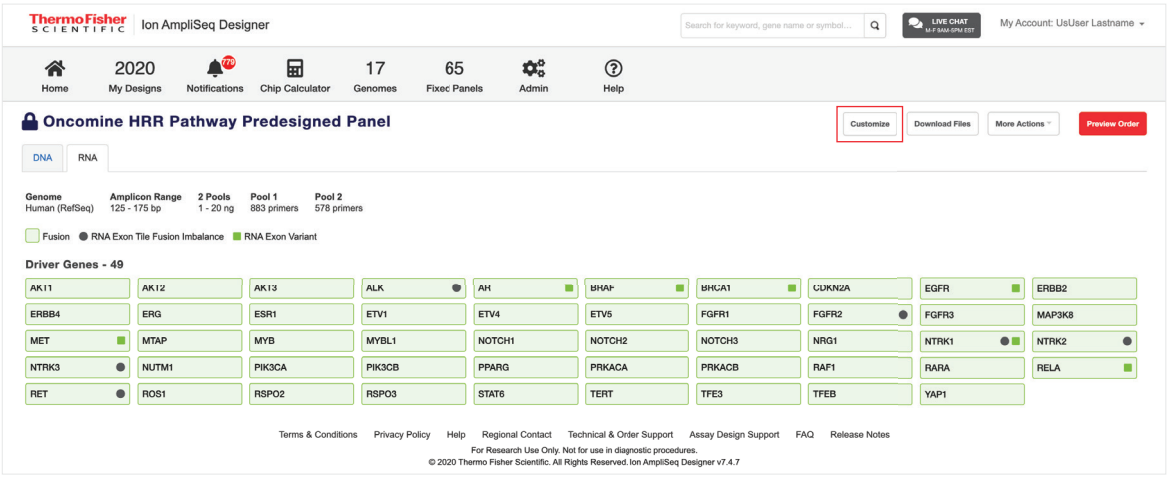
- The check box in the upper-left corner is used to select/deselect genes
- The “X” in the upper-right corner is to permanently remove the gene from the selection
- Colors: green means included, and gray means excluded

There is also an indicator that tells you how many genes are in your panel design and the price tier of your panel.

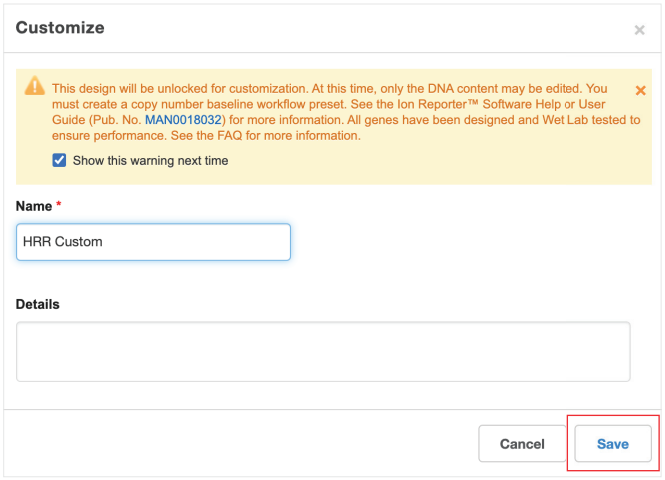
Price Tier 1: 1–10 genes
Price Tier 2: 11–30 genes
Price Tier 3: 31–50 genes
Price Tier 4: 51–75 genes
Price Tier 5: 76–100 genes
Price Tier 6: 101–150 genes

When customizing a panel, follow the “Ordering a panel” process until step 4 (page 3), then click the “Customize” button. You will notice there is an RNA tab associated with this panel. The Oncomine tumor specific RNA panel can be ordered with this panel; however, it cannot be customized.





Step 5: Name the new panel design. Provide details, then click the “Save” button.

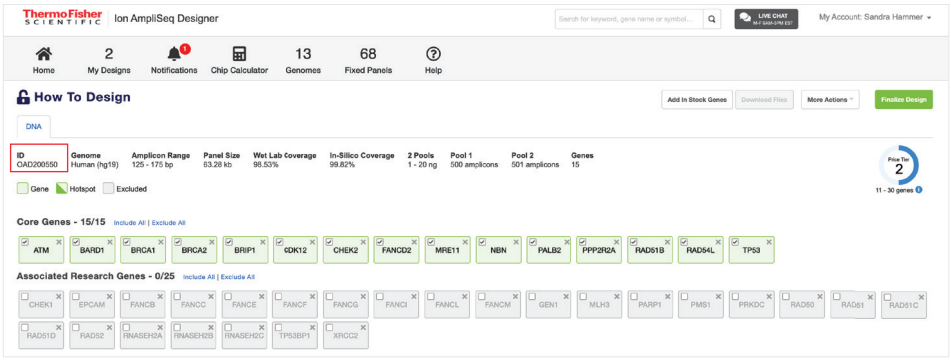


Step 6: Alter the panel design to:

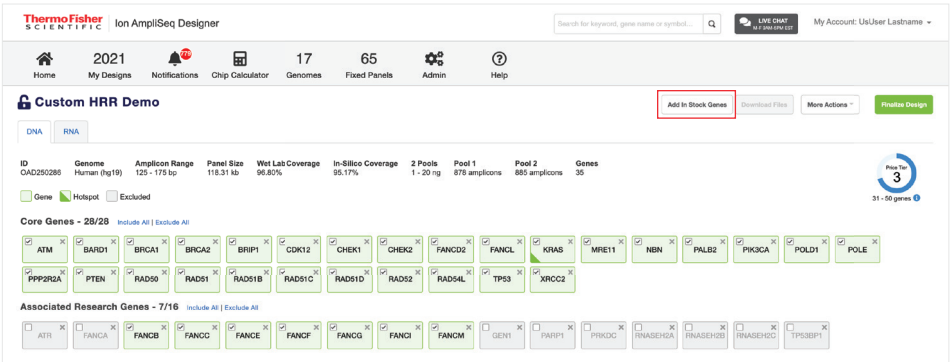
1. Remove genes from the core panel.
2. Add associated research genes.
3. Add Oncomine tumor specific stock genes. Before you log in to **ampliseq.com**, use the search genes form (**thermofisher.com/oncomine-specific-search**) to see if your gene of interest is part of a predesigned panel or in the Oncomine tumor specific panel stock gene inventory. Or simply ask your sales representative.

TIP: As you alter the design, watch the price tier indicator, as it may change.

TIP: When you create a custom design, the ID is used on the box label and tube labels. The ID can be found in the details on the design screen.



The Oncomine HRR Pathway Predesigned Panel



Customizing the Oncomine HRR Pathway Predesigned Panel with associated research genes

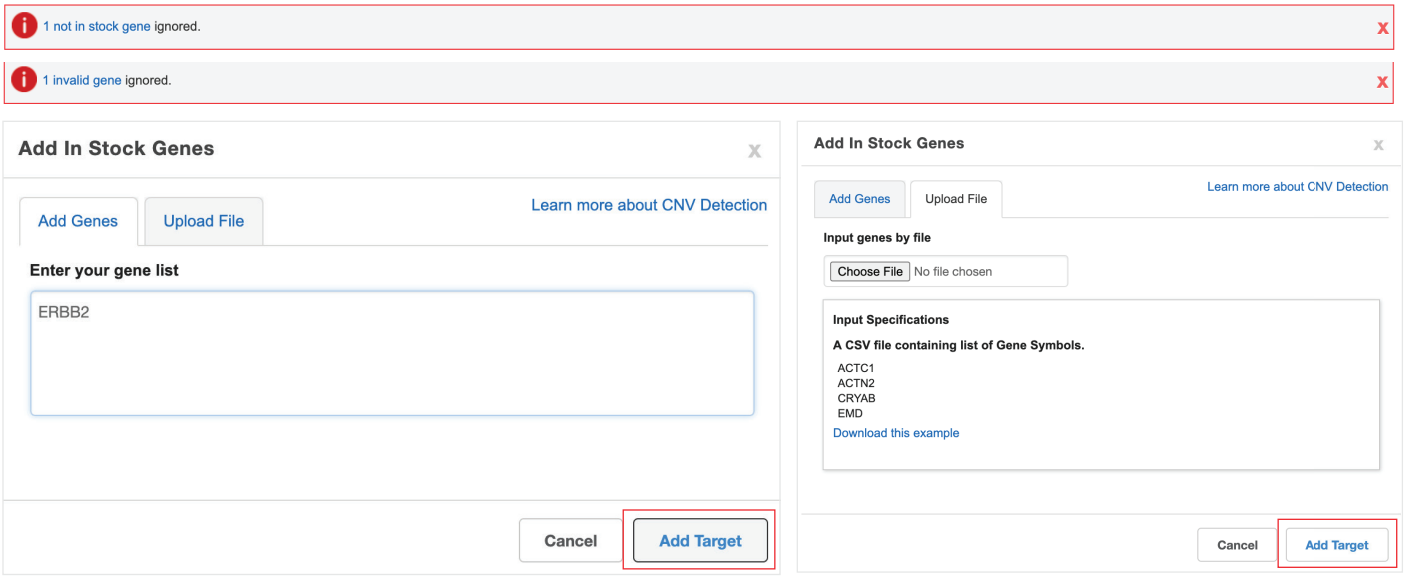
Step 7: If your gene of interest does not appear in this panel's core gene list or associated research gene list, it is possible to add it using the "Add in Stock Genes" function.

By adding only the genes found within the >270-gene Oncomine tumor specific panel inventory of stock genes, panel performance and SVB and CNB files are generated within thresholds.

Click the "Add in Stock Genes" button.

In the "Add Genes" tab, enter the gene or gene list using RefSeq nomenclature and click the "Add Target" button.

This tool will let you know if the gene is not available or if the gene symbol is not accepted.

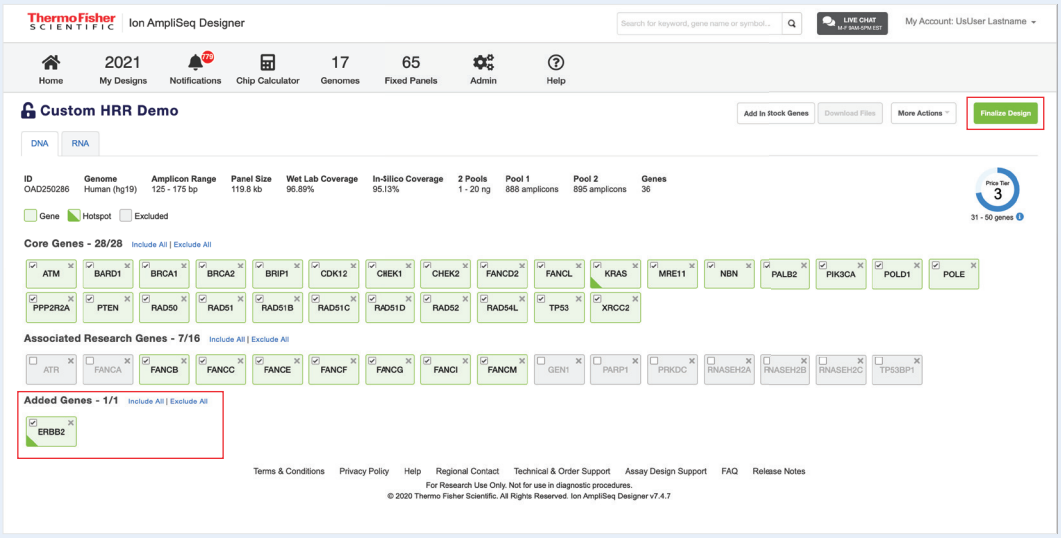


If your gene is not found in the Oncomine tumor specific panel stock gene inventory, please ask your sales representative how to confirm that your gene(s) can be integrated into these panels while ensuring performance.

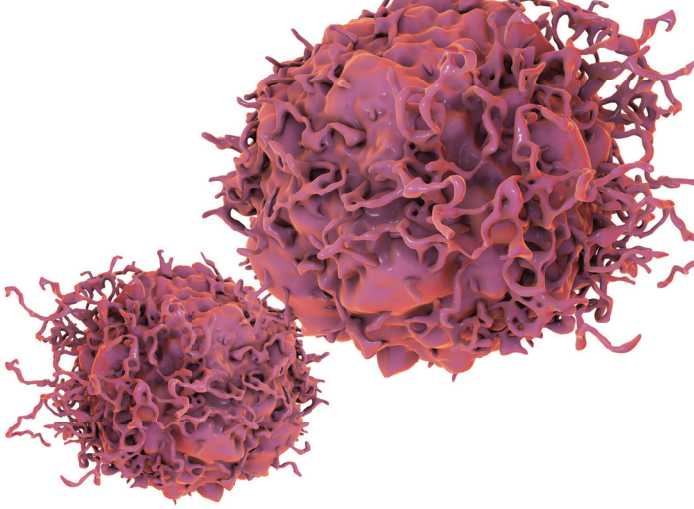
Step 8: Verify that your added gene(s) appears correctly.

Step 9: Click the "Finalize Design" button.

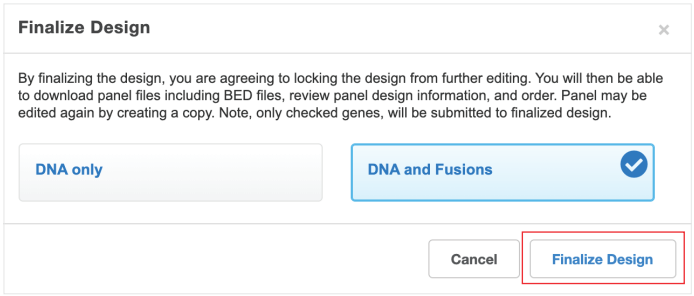
Once finalized, the BED files will be made available.



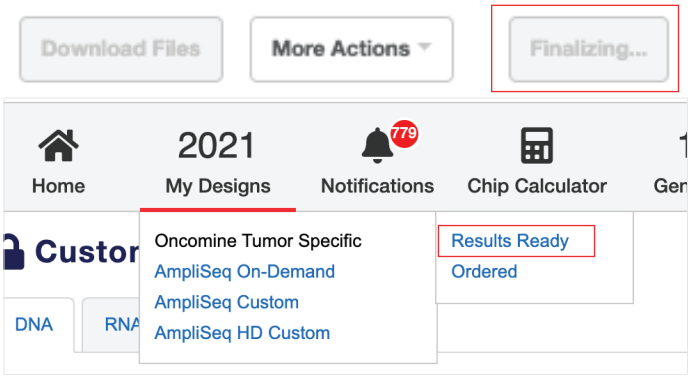
ion torrent



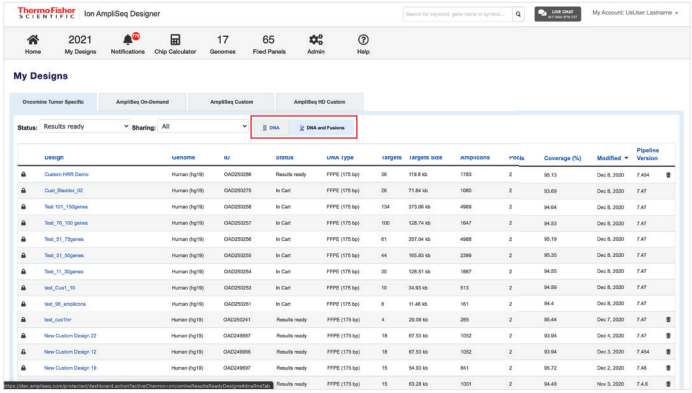
Step 10: In this case, both “DNA only” and “DNA and Fusions” options will be available. Make your selection and click the “Finalize Design” button.



Step 11: Wait for the design to finalize.



Step 12: Find your design in My Designs, on the “Oncomine Tumor Specific” tab, with a status of “Results Ready.” All of your designs are listed here. Note that the buttons at the top sort the designs by “DNA” or “DNA and Fusions” to help you keep them organized.



Find out more at **thermofisher.com/oncomine-specific**

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