NCI Patient-Derived Models Repository (PDMR) Material Request Procedures

The following items are required to receive materials:

1. Fill out a PDMR Model Request Form.
    a. Currently only requests from Domestic sites, until further notice
    b. Please note, currently only payments using a check made out to "**Leidos Biomedical Research**" can be accepted. Funds will subsequently be deposited with the National Cancer Institute.
2. Send the Material Transfer Agreement (MTA) with all requested models included in the Appendix and the requesting site's authorizing official signature affixed. Once the request has been approved, NCI will route for signatures by the NCI authorizing official.
    a. Intramural Investigators: Use the designated MTA for Intramural Investigators
3. On the Model Request Form, Provide a brief description of the research plan for the requested material in Section 4 of the Request Form.
4. If requesting cryopreserved fragments for PDX generation, provide a copy of your ACUC protocol indicating your laboratory, or designate, uses NOD.Cg-Prkdc^{scid}Il2rg^{tm1Wjl}/SzJ (NSG) mice. All PDMR PDXs must be initially implanted into NSG mice.

Specimen types that may be requested:

- **Vial of Cryopreserved PDX fragments**: Single vial from a PDX tumor no higher than the listed maximum passage for the distribution lot; sufficient tissue to implant into 2-5 NSG mice
- **Vial of Flash-frozen DNA**: Single vial from a PDX tumor no higher than the listed maximum passage for the distribution lot. Approximately 2-3 µg DNA in at least 10 µL prepared using Qiagen's DNA/RNA AllPrep Mini Kit (cat#: 80204)
- **Vial of Flash-frozen RNA**: Single vial from a PDX tumor no higher than the listed maximum passage for the distribution lot. Approximately 2-3 µg RNA in at least 10 µL prepared using Qiagen's DNA/RNA AllPrep Mini Kit (cat#: 80204). RNA quality is periodically assessed using an Agilent 2100 Bioanalyzer and vials are maintained if the RIN is >5. For those interested in doing RNASeq, we would recommend requesting a flash-frozen fragment and performing an independent extraction.
- **Vial of Flash-frozen PDX fragment**: For protein extraction, single vial with a 30-mg flash-frozen PDX tumor fragment no higher than the listed maximum passage for the distribution lot

Requests will be processed after receipt of all required items. Legible MTAs may be submitted by e-mail, to the address below. The requests will not be reviewed until all paperwork has been received. Please send the necessary paperwork to: NCI_PDM_Repository@mail.nih.gov

MTA Information

- Multiple models and cell fractions may be ordered using a single MTA
- Clearly identify each requested item in Appendix 1 of the MTA.
- Newly requested material and MTA renewals will require completion of a new MTA
- An MTA is active for a period of three years from the date of execution
- Requests by the same investigator for previously received material should indicate the active MTA number in the request email along with reason for duplicate request.
- NIH/NCI main Maryland campus investigators, use intramural MTA for request.
- Note: For standard requests for research-use of PDMR material, the check-box in bullet #3 does not need to be checked. This is for specific use-case collaborations set-up by the NCI.

PDMR Request Review Criteria

A committee of National Cancer Institute and Frederick National Laboratory for Cancer Research scientists will review all requests prior to approval of distribution.

NCI's goal is to maintain all patient-derived models at the earliest possible passage for distribution; because of this these materials will have a limited distribution life time and therefore care will be taken to ensure end-users have the experience to utilize the material.

For example, sites that do not have an ACUC protocol for NOD.Cg-Prkdc^{scid}Il2rg^{tm1Wjl}/SzJ (NSG) mice would not be approved for distribution of cryopreserved PDX fragments as the PDMR require initial implantation into NSG mice for PDX generation. Sites requesting cryopreserved PDX fragments also need to clearly state their plan to freeze down their own stock of PDX fragments for their planned studies.

Limitations and Caveats (see website for a more detailed list):

- PDX models re-grown from cryopreservation can grow slowly; expect initial implants to take as long as 200 days before tumor is of sufficient size for passage
- Some models have stably low tumor content (e.g., 30%); the remainder being murine stroma
- NCI PDMR passages tumors using PDX fragments; therefore, tumor heterogeneity can be observed across different PDXs within a model. The PDMR cannot guarantee which fragment a site will receive. For instance, there may be variation in differentiation level of the tumor or for a stomach adenocarcinoma in the signet ring cell content.
- NCI PDMR provided PDX pathology, WES, RNASeq, etc in the PDMR database are representative of the model. Recipients should perform their own analysis on PDXs they generate to characterize them. STR profiles are provided for all models in the PDMR database and should be used for model authentication.
- DNA, RNA, and protein vials are from PDX tumors which are a mixture of human tumor and mouse stroma; these are not pure human extractions. The mouse strain used for PDX growth is a NOD- NOD.Cg-Prkdc^{scid}Il2rg^{tm1Wjl}/SzJ (NSG) strain; the whole exome sequence (*.vcf) for the colony of NSG mice used by NCI PDMR can be found on the SOP page under the Genomics section.

General Shipping and Handling Information

Domestic Recipients

- A Federal Express account number provided by the Recipient to which the shipment can be charged is required for all Domestic requests
- An invoice for the Distribution Costs (excluding shipping; see table below) will be e-mailed to the designated Recipient Billing Contact once materials have been shipped.

International Recipients (NOT YET AVAILABLE):

IMPORTANT: As stated above, the PDMR currently does not distribute to International requestors, but it is expected that this will be an option in the future. Date to be determined and announced.

Contact information:

NCI Patient-Derived Models Repository - NCI_PDM_Repository@mail.nih.gov

Distribution Costs (excluding shipping)

- Payment by **check only**, made payable to the "**Leidos Biomedical Research.**" These monies will then be transferred to the National Cancer Institute.
- An invoice for the Distribution Costs will be e-mailed to the designated Recipient Billing Contact once materials have been shipped.
- Remittance should be received within 30-days of invoice.

Specimen Type	NCI/NIH Investigators: at MD campuses only	Academia & Non-Profits: both Domestic & International & non-MD campus NCI/NIH Investigators	Commercial Entities: both Domestic & International
Per Cryopreserved PDX vial: to implant for PDX generation only	$0	$250	$2500
Per flash-frozen DNA, RNA, or tumor fragment: for molecular characterization of PDXs	$0	$200	$1500