INVITAE

navigateAPDS by Pharming

ORDER ID
For Invitae internal use only

Requisition Form

navigateAPDS Sponsored Testing Program Requisition TRF882-3

This requisition form can be used to submit an order for the **navigateAPDS Sponsored Testing Program**, a sponsored testing program for genetic disorders brought to you by **Pharming Healthcare, Inc.**

INSTRUCTIONS: Review the ordering options and then complete all sections of this form. Your ordering option will be indicated in the test selection section.

navigateAPDS Sponsored Testing Program Eligibility Criteria

REQUIRED: You must select below the appropriate eligibility criteria for this patient.

This program is available to patients in the U.S. and Canada who meet *any two or more* of the following bulleted criteria below:

Clinical Features

- ◯ Onset of symptoms under 12 years of age
- ◯ Documented severe recurrent sinopulmonary infections (> 2 events within 3 years of each other)
- ◯ Bronchiectasis
- ◯ Lymphadenopathy for greater than one month
- ◯ Any nodular lymphoid hyperplasia
- ◯ Chronic hepatomegaly or chronic splenomegaly
- ◯ Severe, persistent, or recurrent Herpesviridae infections (e.g., EBV, cytomegalovirus)
- ◯ Autoimmune cytopenia
- ◯ Enteropathy
- ◯ Lymphoma at 0-25 years - meets the 2 eligibility criteria
- ◯ Lymphoma at ≥ 26 years of age - requires second eligibility criteria

Laboratory

- ◯ Hypogammaglobulinemia
- ◯ Elevated levels of immunoglobulin M
- ◯ Increased number of follicular helper T cells
- ◯ Reduced number of naïve B cells

History

- ◯ Primary Immune Deficiency diagnosis
- ◯ Common Variable Immune Deficiency (CVID) phenotype or direct family member with CVID phenotype
- ◯ Relative with PIK3CD or PIK3R1 genotype (first or second degree)
  Provide the specified details from your relative's clinical report under the requested variant section at the bottom of page 2

PATIENT INFORMATION

First name	MI	Last name
Date of birth (MM/DD/YYYY)	Biological sex ◯ M ◯ F	MRN (medical record number)

Ancestry ◯ Asian ◯ Black/African American ◯ White/Caucasian ◯ Ashkenazi Jewish ◯ Hispanic ◯ Native American ◯ Pacific Islander ◯ French Canadian ◯ Sephardic Jewish ◯ Mediterranean ◯ Other: _____

Phone	Email address (report access after clinician releases)	
Address		City
State/Prov	ZIP/Postal code	Country

Ship a kit to this patient (optional) by faxing or emailing this completed form to Invitae

Kit type: ◯ Buccal swab kit ◯ Saliva kit

Ship to: ◯ Address above ◯ Alternate address: _____

SPECIMEN INFORMATION

Specimen type: Blood (3-mL purple EDTA) -OR- Buccal Swabs (OCD-100, 2 devices) -OR- Saliva (Oragene™) -OR- DNA source: _____

We are unable to accept blood/buccal/saliva from patients with:
- *Allogeneic bone marrow transplants*
- *Blood transfusion <2 weeks prior to specimen collection*

Specimen collection date (MM/DD/YYYY):
If not provided, the day before specimen receipt will be used

Special cases: ◯ History of/current hematologic malignancy in patient

INVITAE PARTNER CODE

APDS

CLINICIAN INFORMATION

Organization name		
Phone	Fax	
Address	City	
State/Prov	ZIP/Postal code	Country

Primary clinical contact name (if different from ordering provider)	NPI
Primary clinical contact email address (for report access)	

Ordering provider (select one ordering provider by marking the checkbox before the name)

	Name	NPI	Email address (for report access)
◯			
◯			

Additional clinical or laboratory contacts (optional, to share access to order online)

◯ **Share this order with the primary clinical contact's default clinical team, manage at invitae.com**

Name	Email address (for report access)
Name	Email address (for report access)

POST-TEST GENETIC COUNSELING (please review)

Pharming sponsors post-test genetic counseling, regardless of test result type, at no additional charge to the patient through GeneMatters, an independent genetic counseling service. Please check the box below if you would like GeneMatters to contact your patient for genetic counseling once the patient's test is complete.

◯ **I authorize Invitae to grant GeneMatters (gca@gene-matters.com) access to the patient's Invitae record for the purposes of providing genetic counseling services**

CLINICAL HISTORY

FAMILY HISTORY

Is there a family history of disease for which the patient is being tested? ◯ Yes ◯ No If yes, describe below and attach pedigree and/or clinical notes.

Relative's relationship to this patient	Maternal or paternal	Diagnosed condition	Age at diagnosis	Relative's relationship to this patient	Maternal or paternal	Diagnosed condition	Age at diagnosis

PERSONAL HISTORY

Is/was this patient affected or symptomatic?† ◯ Yes ◯ No
Provide details in the required clinical history questions (if applicable).

† Symptomatic means this patient has features or signs known or suspected to be related to the genetic testing being ordered and could include findings on physical examination, laboratory tests, or imaging.

REQUIRED CLINICAL HISTORY

Age of symptom onset: _____

Current Diagnoses: _____

Weight: _____

	Y	N	UNKNOWN
Familial history of APDS	◯	◯	◯
Family history of Common Variable Immune Deficiency (CVID)	◯	◯	◯
Infectious Complications			
Documented severe recurrent sinopulmonary infections	◯	◯	◯
Recurrent pneumonia	◯	◯	◯
Bronchiectasis	◯	◯	◯
Severe, persistent or recurrent herpesvirus infection (e.g. EBV, CMV)	◯	◯	◯
Noninfectious Complications			
Lymphadenopathy for greater than one month	◯	◯	◯
Splenomegaly	◯	◯	◯
Hepatomegaly	◯	◯	◯
Nodular mucosal lymphoid hyperplasia	◯	◯	◯
Autoimmune cytopenia	◯	◯	◯
Enteropathy	◯	◯	◯
Non food related eosinophilic esophagitis	◯	◯	◯
Lymphoma	◯	◯	◯
Developmental delay	◯	◯	◯
Allergic disorders/atopy	◯	◯	◯

Lab findings	Y	N	UNKNOWN
Hypogammaglobulinemia	◯	◯	◯
Elevated IgM	◯	◯	◯
Increased transitional B-cells	◯	◯	◯
Reduced naïve B cells	◯	◯	◯
Elevated T follicular helper (Tfh) cells	◯	◯	◯

ADDITIONAL CLINICAL HISTORY (OPTIONAL)

Laboratory findings	Patient Value/Reference Range
Serum IgG:	_____/_____
Serum IgM:	_____/_____

OPTIONAL - REQUESTED VARIANTS FOR THIS PATIENT'S REPORT, IF KNOWN

To have the presence or absence of specific variants commented on in this patient's report, provide the details below.

Was the proband (individual with variant) tested at Invitae? ◯ Yes, Invitae Order ID: RQ# _____ ◯ No: Attach copy of lab results (*required*)

Variant(s) *(e.g. GENE c.2200A>T (p.Thr734Ser) NM_00012345) If left blank, all variants identified in the proband will be commented on.*		**This patient's relationship to proband:**
		◯ Parent ◯ Sibling ◯ Grandchild
		◯ Child ◯ Self ◯ Other: _____

navigateAPDS Sponsored Testing Program

Test code	Test name	# of genes	Gene list
○ 08104	Invitae Inborn Errors of Immunity and Cytopenias Panel* (*Includes all 429 genes from Primary Immunodeficiency Panel)	574	ABCB7, ABCG5, ABCG8, ACAN, ACD, ACP5, ACTB, ACTN1, ADA, ADA2, ADAM17, ADAMTS13, ADAR, ADGRE2, AICDA, AIRE, AK2, AK7, ALAS2, ALG6, ALPK1, ANGPT1, ANKRD26, ANKZF1, ANO6, AP3B1, AP3D1, ARHGEF1, ARMC4, ARPC1B, ASAH1, ATM, ATP6AP1, ATR, B2M, BACH2, BCL10, BCL11B, BLM, BLNK, BLOC1S3, BLOC1S6, BRCA1, BRCA2, BRIP1, BTK, C11orf70, C15orf41, C17orf62,C1QA, C1QB, C1QC, C1S, C2, C3, C5, C6, C7, C8A, C8B, C9, CARD11, CARD14, CARD8, CARD9, CARMIL2, CASP10, CASP8, CBL, CCBE1, CCDC103, CCDC114, CCDC151, CCDC39, CCDC40, CCDC65, CCNO, CD19, CD247, CD27, CD3D, CD3E, CD3G, CD40, CD40LG, CD46, CD55, CD59, CD79A, CD79B, CD81, CD8A, CDAN1, CDC42, CDCA7, CEBPE, CEP164, CFAP298, CFB, CFD, CFH, CFI, CFP, CFTR, CHD7, CHEK2, CIB1, CIITA, CLCN7, CLPB, COL7A1, COPA, CORO1A, CR2, CSF2RA, CSF2RB, CSF3R, CTC1, CTLA4, CTPS1, CTSC, CXCR2, CXCR4, CYBA, CYBB, CYCS, CYP27A1, DBR1, DCLRE1C, DDX41, DDX58, DEF6, DGAT1, DGKE, DIAPH1, DKC1, DNAAF1, DNAAF2, DNAAF3, DNAAF4, DNAAF5, DNAH1, DNAH11, DNAH5, DNAH8, DNAH9, DNAI1, DNAI2, DNAJB13, DNAJC21, DNAL1, DNASE1L3, DNASE2, DNMT3B, DOCK2, DOCK8, DRC1, DSG1, DTNBP1, DUOX2, EFL1, EIF2AK3, ELANE, EPCAM, EPG5, ERBIN, ERCC2, ERCC3, ERCC4, ERCC6L2, ETV6, EXTL3, FADD, FANCA, FANCB, FANCC, FANCD2, FANCE, FANCF, FANCG, FANCI, FANCL, FANCM, FAS, FASLG, FAT4, FCHO1, FERMT1, FERMT3, FLI1, FNIP1, FOXI3, FOXN1, FOXP3, FPR1, G6PC, G6PC3, G6PD, GAS8, GATA1, GATA2, GFI1, GINS1, GLRX5, GP1BA, GP6, GP9, GTF2E2, GTF2H5, GUCY2C, HAX1, HELLS, HMOX1, HPS1, HPS3, HPS4, HPS5, HPS6, HTRA2, HYOU1, ICOS, ICOSLG, IFIH1, IFNAR1, IFNAR2, IFNGR1, IFNGR2, IGLL1, IKBKB, IKZF1, IL10, IL10RA, IL10RB, IL12B, IL12RB1, IL12RB2, IL17F, IL17RA, IL17RC, IL18BP, IL1RN, IL21, IL21R, IL23R, IL2RA, IL2RB, IL2RG, IL36RN, IL6R, IL6ST, IL7R, IRAK4, IRF2BP2, IRF4, IRF7, IRF8, IRF9, ISG15, ITCH, ITGA2B, ITGAM, ITGB2, ITGB3, ITK, JAGN1, JAK1, JAK2, JAK3, KAT6A, KDM1A, KDM6A, KIF23, KIT, KLF1, KLHDC8B, KMT2A, KMT2D, LAMTOR2, LARS2, LAT, LCK, LCT, LIG1, LIG4, LIPA, LPIN2, LRBA, LRRC56, LRRC6, LRRC8A, LYN, LYST, MAD2L2, MAGT1, MALT1, MAP3K14, MBD4, MCIDAS, MCM4, MECOM, MEFV, MKL1, MLH1, MOGS, MPL, MPLKIP, MS4A1, MSH2, MSH6, MSN, MTHFD1, MVK, MYD88, MYH9, MYO5B, MYSM1, NAF1, NBAS, NBN, NCF2, NCF4, NCKAP1L, NCSTN, NDUFB11, NEUROG3, NF1, NFAT5, NFE2L2, NFKB1, NFKB2, NFKBIA, NHEJ1, NHP2, NLRC4, NLRP1, NLRP12, NLRP3, NME8, NOD2, NOP10, NOTCH2, NPAT, NSMCE3, OAS1, OFD1, ORAI1, OSTM1, OTULIN, P2RY12, PALB2, PARN, PAX1, PEPD, PGM3, PIH1D3, PIK3CD, PIK3R1, PLA2G4A, PLCG2, PLG, PLVAP, PMM2, PMS2, PNLIP, PNP, POLA1, POLD1, POLD2, POLE, POLE2, POLR3A, POLR3F, POMP, POT1, PRF1, PRKCD, PRKDC, PSENEN, PSMA3, PSMB4, PSMB8, PSMG2, PSTPIP1, PTEN, PTPRC, PUS1, RAB27A, RAC2, RAD51, RAD51C, RAG1, RAG2, RANBP2, RASGRP1, RASGRP2, RBCK1, RBM8A, RECQL4, REL, RELA, RELB, RFWD3, RFX5, RFXANK, RFXAP, RHOH, RIPK1, RMRP, RNASEH2A, RNASEH2B, RNASEH2C, RNF113A, RNF168, RNF31, RNU4ATAC, RORC, RPGR, RPL11, RPL15, RPL18, RPL19, RPL23, RPL26, RPL27, RPL31, RPL35, RPL35A, RPL5, RPL9, RPS10, RPS15A, RPS19, RPS24, RPS26, RPS27, RPS28, RPS29, RPS7, RPSA, RSPH1, RSPH3, RSPH4A, RSPH9, RTEL1, RUNX1, SAMD9, SAMD9L, SAMHD1, SAR1B, SBF2, SCO2, SEC23B, SEC61A1, SEMA3E, SERPING1, SGPL1, SH2D1A, SH3BP2, SH3KBP1, SI, SIAE, SKIV2L, SLC10A2, SLC19A2, SLC25A38, SLC26A3, SLC29A3, SLC35C1, SLC37A4, SLC39A7, SLC46A1, SLC51B, SLC5A1, SLC7A7, SLC9A3, SLX4, SMARCAL1, SMARCD2, SNX10, SP110, SPAG1, SPINK5, SPINT2, SPPL2A, SRP54, SRP72, STAT1, STAT2, STAT3, STAT4, STAT5B, STIM1, STK4, STN1, STX11, STX3, STXBP2, TAOK2, TAP1, TAP2, TAPBP, TAZ, TBX1, TBXA2R, TCF3, TCIRG1, TCN2, TERC, TERF2IP, TERT, TET2, TFRC, TFB1, TGFBR1, TGFBR2, THBD, THPO, TICAM1, TIMM50, TINF2, TLR3, TLR7, TMC6, TMC8, TMEM173, TMPRSS15, TNFAIP3, TNFRSF11A, TNFRSF13B, TNFRSF13C, TNFRSF1A, TNFRSF4, TNFRSF6B, TNFRSF9, TNFSF11, TNFSF12, TONSL, TOP2B, TP53, TP63, TPP2, TRAF3, TRAF3IP2, TREX1, TRNT1, TSR2, TTC37, TTC7A, TUBB1, TYK2, UBE2T, UNC13D, UNC45A, UNC93B1, UNG, USB1, VAV1, VIPAS39, VPS13B, VPS33B, VPS45, WAS, WDR1, WIPF1, WNT2B, WRAP53, XIAP, XRCC2, YARS2, ZAP70, ZBTB24, ZCCHC8, ZMYND10, ZNF341
○ 08100	Invitae Primary Immunodeficiency Panel	429	ACD, ACP5, ACTB, ADA, ADA2, ADAM17, ADAR, ADGRE2, AICDA, AIRE, AK2, ALG6, ALPK1, ANGPT1, ANKZF1, AP3B1, AP3D1, ARHGEF1, ARPC1B, ASAH1, ATM, ATP6AP1, B2M, BACH2, BCL10, BCL11B, BLM, BLNK, BLOC1S3, BLOC1S6, BTK, C17orf62, C1QA, C1QB, C1QC, C1S, C2, C3, C5, C6, C7, C8A, C8B, C9, CARD11, CARD14, CARD8, CARD9, CARMIL2, CASP10, CASP8, CBL, CCBE1, CD19, CD247, CD27, CD3D, CD3E, CD3G, CD40, CD40LG, CD46, CD55, CD59, CD79A, CD79B, CD81, CD8A, CDC42, CDCA7, CEBPE, CFB, CFD, CFH, CFI, CFP, CHD7, CIB1, CIITA, CLCN7, CLPB, COL7A1, COPA, CORO1A, CR2, CSF2RA, CSF2RB, CSF3R, CTC1, CTLA4, CTPS1, CTSC, CXCR2, CXCR4, CYBA, CYBB, CYP27A1, DBR1, DCLRE1C, DDX58, DEF6, DGAT1, DIAPH1, DKC1, DNAJC21, DNASE1L3, DNASE2, DNMT3B, DOCK2, DOCK8, DSG1, DTNBP1, DUOX2, EFL1, EIF2AK3, ELANE, EPG5, ERBIN, ERCC2, ERCC3, ERCC6L2, EXTL3, FADD, FANCA, FANCB, FANCE, FANCF, FANCI, FANCL, FAS, FASLG, FAT4, FCHO1, FERMT1, FERMT3, FNIP1, FOXI3, FOXN1, FOXP3, FPR1, G6PC, G6PC3, G6PD, GATA1, GATA2, GFI1, GINS1, GTF2E2, GTF2H5, GUCY2C, HAX1, HELLS, HMOX1, HPS1, HPS3, HPS4, HPS5, HPS6, HTRA2, HYOU1, ICOS, ICOSLG, IFIH1, IFNAR1, IFNAR2, IFNGR1, IFNGR2, IGLL1, IKBKB, IKZF1, IL10, IL10RA, IL10RB, IL12B, IL12RB1, IL12RB2, IL17F, IL17RA, IL17RC, IL18BP, IL1RN, IL21, IL21R, IL23R, IL2RA, IL2RB, IL2RG, IL36RN, IL6R, IL6ST, IL7R, IRAK4, IRF2BP2, IRF4, IRF7, IRF8, IRF9, ISG15, ITCH, ITGAM, ITGB2, ITK, JAGN1, JAK1, JAK3, KAT6A, KDM6A, KMT2A, KMT2D, LAMTOR2, LAT, LCK, LCT, LIG1, LIG4, LIPA, LPIN2, LRBA, LRRC8A, LYN, LYST, MAD2L2, MAGT1, MALT1, MAP3K14, MCM4, MEFV, MKL1, MOGS, MPLKIP, MS4A1, MSN, MTHFD1, MVK, MYD88, MYO5B, MYSM1, NBAS, NBN, NCF2, NCF4, NCKAP1L, NCSTN, NEUROG3, NFAT5, NFE2L2, NFKB1, NFKB2, NFKBIA, NHEJ1, NHP2, NLRC4, NLRP1, NLRP12, NLRP3, NOD2, NOP10, NSMCE3, OAS1, ORAI1, OSTM1, OTULIN, PARN, PAX1, PEPD, PGM3, PIK3CD, PIK3R1, PLCG2, PLVAP, PMM2, PNLIP, PNP, POLA1, POLD1, POLD2, POLE, POLE2, POLR3A, POLR3F, POMP, PRF1, PRKCD, PRKDC, PSENEN, PSMA3, PSMB4, PSMB8, PSMG2, PSTPIP1, PTPRC, RAB27A, RAC2, RAG1, RAG2, RANBP2, RASGRP1, RBCK1, REL, RELA, RELB, RFWD3, RFX5, RFXANK, RFXAP, RHOH, RIPK1, RMRP, RNASEH2A, RNASEH2B, RNASEH2C, RNF113A, RNF168, RNF31, RNU4ATAC, RORC, RPSA, RTEL1, SAMD9, SAMD9L, SAMHD1, SAR1B, SCO2, SEC61A1, SEMA3E, SERPING1, SGPL1, SH2D1A, SH3BP2, SH3KBP1, SI, SIAE, SKIV2L, SLC10A2, SLC26A3, SLC29A3, SLC35C1, SLC37A4, SLC39A7, SLC46A1, SLC51B, SLC5A1, SLC7A7, SLC9A3, SLX4, SMARCAL1, SMARCD2, SNX10, SP110, SPINK5, SPINT2, SPPL2A, SRP54, SRP72, STAT1, STAT2, STAT3, STAT4, STAT5B, STIM1, STK4, STN1, STX11, STX3, STXBP2, TAOK2, TAP1, TAP2, TAPBP, TAZ, TBX1, TCF3, TCIRG1, TCN2, TERC, TERT, TFRC, TGFB1, TGFBR1, TGFBR2, THBD, TICAM1, TIMM50, TINF2, TLR3, TLR7, TMC6, TMC8, TMEM173, TMPRSS15, TNFAIP3, TNFRSF11A, TNFRSF13B, TNFRSF13C, TNFRSF1A, TNFRSF4, TNFRSF6B, TNFRSF9, TNFSF11, TNFSF12, TONSL, TOP2B, TP63, TPP2, TRAF3, TRAF3IP2, TREX1, TRNT1, TTC37, TTC7A, TYK2, UNC13D, UNC45A, UNC93B1, UNG, USB1, VAV1, VPS13B, VPS45, WAS, WDR1, WIPF1, WNT2B, WRAP53, XIAP, ZAP70, ZBTB24, ZCCHC8, ZNF341

Invitae continually updates its panels based on the most recent evidence. If an order is placed using an outdated test requisition form, Invitae reserves the right to upgrade ordered tests to their current versions. Test IDs containing add-on codes will include the original panel as well as the add-on.

By signing this form, the medical professional acknowledges that the individual/family member authorized to make decisions for the individual (collectively, the "Patient") has been supplied information regarding and consented to undergo genetic testing, substantially as set forth in Invitae's Informed Consent for Genetic Testing (www.invitae.com/forms). The medical professional will retain evidence that the patient consented to genetic testing. The Patient has been informed that Invitae may notify them of clinical updates related to genetic test results (in consultation with the ordering medical professional as indicated) and has been informed that deidentified (also referred to as pseudonymized) patient data may be used and shared with third parties in connection with the Program, for research and commercial purposes. For orders originating outside the United States, the Patient has been informed that their personal information and specimen will be transferred to and processed in the United States. The medical professional warrants that (i) he/she will not seek reimbursement for this no-charge test from any third party, including but not limited to government healthcare programs; (ii) participation in the Program will not influence the his/her medical decisions; (iii) he/she is not obligated to purchase or prescribe any product or service offered by a sponsor of the Program; (iv) he/she is not obligated to participate in or to encourage patients to participate in any clinical trial or other research program conducted by a sponsor; and (v) he/she will participate in the Program in accordance with applicable laws. The medical professional consents to the sharing of organization and clinician contact information with third parties, including commercial organizations, who may contact the medical professional directly in connection with the Program. A list of third party partners will be provided upon request. I attest that I am authorized under applicable law to order this test.

Medical professional signature (required)	Date (MM/DD/YYYY)

