INVITAE

ORDER ONLINE at www.invitae.com/signin.

INVITAE CONFIRMATION CODE Place sticker with IB code here	ORDER ID For Invitae internal use only

Requisition Form

IMMUNOLOGY TRF922-2

PATIENT INFORMATION

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

Ancestry ◯ Asian ◯ Black/African American ◯ White/Caucasian ◯ Ashkenazi Jewish ◯ Hispanic ◯ Native American ◯ Pacific Islander ◯ Other:

Email address (for report access after release by medical professional)

Phone	Is this patient deceased? ◯ Yes ◯ No Deceased date:
Address	City
State / ZIP code / Country	

SPECIMEN INFORMATION

Label each tube with the patient's full name, date of birth, and specimen collection date.
A requisition form MUST accompany each specimen. www.invitae.com/specimen-requirements

Specimen type
◯ Blood ◯ Saliva ◯ Assisted saliva ◯ DNA - source:

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

Collection date (MM/DD/YYYY)	Special cases ◯ History of/current hematologic malignancy ◯ Resubmission

REASON FOR TESTING

ICD-10 codes	**Previous results**

Diagnostic for personal history? ◯ **Yes** ◯ **No** If yes, describe below.

PRACTICE INFORMATION

Practice name and address

Institution/practice name	
Phone	Fax
Address	City
State / ZIP code / Country	

Primary clinical contact

Name	Role/title
Phone	NPI
Email address (for report access)	

Ordering physician

◯ **Same as primary clinical contact**

Name	NPI
Email address (for report access)	

Additional clinical or laboratory contact (optional)

Name	Email address (for report access)

Letter of Medical Necessity (LMN)

◯ I have attached an LMN and/or other documentation for insurance billing purposes.

◯ I agree to allow Invitae to transfer the information from this requisition to an LMN and/or other documentation using the ordering physician's name as the signature for insurance billing.

Family history? ◯ **Yes** ◯ **No** If yes, describe in detail below or attach pedigree. If there is a known familial variant, indicate here.

MEDICARE BILLING (U.S. ONLY)

◯ **I have attached a copy of the patient's Medicare card & requirements (criteria checklist, patient consent, LMN; available at www.invitae.com/billing)**

Medicare ID#	Medicare is: ◯ Primary payer ◯ Secondary payer

◯ The patient has been treated as a hospital inpatient (>24 hour stay) in the last 14 days

INSURANCE BILLING (U.S. ONLY)

◯ **I have attached a copy of the patient's card**

Insurance company name	Member ID#
Patient relation to policy holder: ◯ Self	◯ Child ◯ Spouse ◯ Other Policy holder name

INSTITUTIONAL BILLING

◯ **Send invoice to practice address above**

Billing contact name	Phone	Fax
Billing email address		
Billing address		City
State / ZIP code / Country		

PATIENT PAY BILLING

Invitae will send an electronic invoice to the patient email listed above

OTHER BILLING

Invitae study code:

OTHER COMMENTS

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/patient-consent), and 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). The Patient has further been informed and hereby authorizes Invitae Corporation ("Invitae") and its designees to release information concerning testing to their insurer in order to process and/or appeal claims on behalf of the Patient. For amounts received directly, the Patient agrees to remit payment to Invitae for testing services rendered. In addition to the above, I attest that I am the ordering physician, or I am authorized by the ordering physician to order this test, or I am authorized under applicable state law to order this test.

Medical professional signature	**Date**

ORDER INSTRUCTIONS

Select a pre-curated test, combine multiple tests, or customize your own test for each patient. Invitae's pricing is per clinical area for initial order and re-requisition. All tests on this form are organized by clinical area. If your order contains tests from multiple clinical areas, you will need to send in two sample tubes and your order will represent two billable events. Your test results will be delivered as two reports. Please contact Client Services with any questions. For Invitae full test menu, please visit **www.invitae.com**.

RE-REQUISITION

Invitae offers one re-requisition at no additional charge within 90 days for genes within the original clinical area. For more information and to request online, please visit **www.invitae.com/re-requisition**.

FAMILY VARIANT TESTING

Invitae offers Family Variant Testing at no additional charge within 90 days for the genes in which the original family member's variant was identified. In such cases, please use the Family Variant Testing/VUS Resolution requisition form (TRF920), available at **www.invitae.com/forms**.

To request a complimentary specimen collection kit visit **www.invitae.com/request-a-kit**

SHIPPING INSTRUCTIONS

Please ship specimen overnight in insulated containers:

Attn: Invitae Client Services
1400 16th Street
San Francisco, CA 94103
USA

PRELIMINARY-EVIDENCE GENES

Invitae's primary panels contain genes for which there is definitive evidence that variants in these genes cause specific diseases. Preliminary-evidence genes are genes for which there is only early evidence of a relationship between variants in these genes and specific diseases. All preliminary-evidence genes are indicated as such on the requisition form below.

ASSAY

Invitae is a CAP-accredited and CLIA-certified clinical diagnostic laboratory performing full-gene sequencing and deletion/duplication analysis using next-generation sequencing technology (NGS). Search for details on the analysis of any gene in our test catalog at **www.invitae.com/physician/search**.

Invitae continually updates its panels based on the most recent evidence. Please note that if an order is placed using an older version of this form, Invitae reserves the right to upgrade any ordered panel(s) to the current version(s). To avoid confusion, please consider placing your order using our online test catalog.

CLINICAL AREA: METABOLIC DISORDERS, NEWBORN SCREENING & IMMUNOLOGY

Test code	Test name		# gene(s)	Gene list
Primary Immunodeficiency				
○ 08100	Invitae Primary Immunodeficiency Panel		207	ACD, ACP5, ACTB, ADA, ADA2, ADAM17, ADAR, AICDA, AIRE, AK2, AP3B1, ATM, B2M, BCL10, BLNK, BLOC1S6, BTK, CARD11, CARD14, CARD9, CASP10, CASP8, CD247, CD27, CD3D, CD3E, CD3G, CD40LG, CD79A, CD79B, CD8A, CEBPE, CHD7, CIITA, CLPB, COPA, CORO1A, CR2, CSF2RA, CSF3R, CTC1, CTLA4, CTPS1, CTSC, CXCR4, CYBA, CYBB, DCLRE1B, DCLRE1C, DKC1, DNMT3B, DOCK2, DOCK8, ELANE, EPG5, FADD, FAS, FASLG, FERMT3, FOXN1, FOXP3, FPR1, G6PC3, GATA2, GFI1, HAX1, ICOS, IFIH1, IFNGR1, IFNGR2, IGLL1, IKBKB, IL10, IL10RA, IL10RB, IL12B, IL12RB1, IL17F, IL17RA, IL17RC, IL1RN, IL21, IL21R, IL2RA, IL2RG, IL36RN, IL7R, IRAK4, IRF7, IRF8, ISG15, ITCH, ITGB2, ITK, JAGN1, JAK3, LAMTOR2, LCK, LIG4, LPIN2, LRBA, LYST, MAGT1, MALT1, MAP3K14, MEFV, MOGS, MVK, MYD88, NBN, NCF2, NCF4, NFAT5, NFKB2, NFKBIA, NHEJ1, NHP2, NLRC4, NLRP12, NLRP3, NOD2, NOP10, ORAI1, PARN, PGM3, PIK3CD, PIK3R1, PLCG2, PMS2, PNP, POLE, PRF1, PRKCD, PRKDC, PSMB8, PSTPIP1, PTPRC, RAB27A, RAC2, RAG1, RAG2, RBCK1, RFX5, RFXANK, RFXAP, RHOH, RMRP, RNASEH2A, RNASEH2B, RNASEH2C, RORC, RTEL1, SAMHD1, SEMA3E, SH2D1A, SH3BP2, SLC29A3, SLC35C1, SLC37A4, SLC7A7, SMARCAL1, SP110, SPINK5, STAT1, STAT2, STAT3, STAT5B, STIM1, STK4, STX11, STXBP2, TAP1, TAP2, TAPBP, TAZ, TBK1, TCN2, TERC, TERT, TFNSF12, TICAM1, TINF2, TLR3, TMC6, TMC8, TMEM173, TNFRSF13B, TNFRSF13C, TNFRSF1A, TNFRSF4, TPP2, TRAF3, TRAF3IP2, TREX1, TRNT1, TTC7A, TYK2, UNC13D, UNC93B1, UNG, VPS13B, VPS45, WAS, WIPF1, XIAP, ZAP70, ZBTB24
Antibody Deficiencies				
○ 08111	Invitae Agammaglobulinemia Panel		6	BLNK, BTK, CD79A, CD79B, IGLL1, PIK3R1
	○ 08111.1	Add-on hypogammaglobulinemia genes	5	GATA2, MOGS, SH2D1A, TRNT1, XIAP
	○ 08111.2	Add-on common variable immunodeficiency genes	21	CD27, CR2, CTLA4, DCLRE1C, ICOS, IL21, IL21R, JAK3, LRBA, NFKB2, PIK3CD, PIK3R1, PLCG2, PRKCD, RAC2, RAG1, STAT3, STXBP2, TNFRSF13B, TNFRSF13C, TNFSF12
○ 08112	Invitae Common Variable Immunodeficiency Panel		17	CD27, CR2, CTLA4, ICOS, IL21, IL21R, LRBA, NFKB2, PIK3CD, PIK3R1, PLCG2, PRKCD, RAC2, STAT3, TNFRSF13B, TNFRSF13C, TNFSF12
	○ 08112.1	Add-on primary immunodeficiencies that can mimic common variable immunodeficiency	5	DCLRE1C, GATA2, JAK3, RAG1, STXBP2
	○ 08112.2	Add-on agammaglobulinemia/ hypogammaglobulinemia genes	10	BLNK, BTK, CD79A, CD79B, GATA2, IGLL1, MOGS, SH2D1A, TRNT1, XIAP

CLINICAL AREA: METABOLIC DISORDERS, NEWBORN SCREENING & IMMUNOLOGY

Test code	Test name	# gene(s)	Gene list
Antibody Deficiencies (continued)			
○ 08113	Invitae Hyper IgE Syndrome Panel	4	DOCK8, PGM3, SPINK5, STAT3
○ 08114	Invitae Hyper IgM Syndrome Panel	4	AICDA, CD40, CD40LG, UNG
○ 08114.1	Add-on clinically overlapping genes	3	BTK, IL2RG, SH2D1A
Autoinflammatory Syndromes			
○ 08120	Invitae Autoinflammatory Syndromes Panel	26	ADA2, ADAM17, CARD14, COPA, ELANE, IL10, IL10RA, IL10RB, IL1RN, IL36RN, LPIN2, MEFV, MVK, NFAT5, NLRC4, NLRP12, NLRP3, NOD2, PLCG2, PSMB8, PSTPIP1, RBCK1, SH3BP2, SLC29A3, TNFRSF1A, TRNT1
○ 08121	Invitae Familial Cold Autoinflammatory Syndrome Panel	4	NLRC4, NLRP12, NLRP3, PLCG2
○ 04313	Invitae Familial Mediterranean Fever Test	1	MEFV
○ 04313.1	Add-on additional periodic fever syndromes genes	11	ADA2, ELANE, LPIN2, MVK, NLRC4, NLRP12, NLRP3, PSMB8, PSTPIP1, TNFRSF1A, TRNT1
○ 08122	Invitae Monogenic Inflammatory Bowel Disease Panel	46	ADA, ADAM17, AICDA, BTK, CD3G, CD40LG, CTLA4, CYBA, CYBB, DCLRE1C, DKC1, DOCK8, FOXP3, G6PC3, ICOS, IL10, IL10RA, IL10RB, IL21, IL2RA, IL2RG, ITGB2, LIG4, LRBA, MEFV, MVK, NCF2, NCF4, NFAT5, NLRC4, PIK3CD, PIK3R1, PLCG2, RAG1, RAG2, RTEL1, SH2D1A, SLC37A4, STAT1, STAT3, STIM1, STXBP2, TTC7A, WAS, XIAP, ZAP70
○ 04312	Invitae Periodic Fever Syndromes Panel	12	ADA2, ELANE, LPIN2, MEFV, MVK, NLRC4, NLRP12, NLRP3, PSMB8, PSTPIP1, TNFRSF1A, TRNT1
Combined T/B Cell Deficiencies			
○ 08130	Invitae Comprehensive Severe Combined Immunodeficiency (SCID) and Combined Immunodeficiency (CID) Panel	49	ADA, AK2, B2M, BCL10, CARD11, CD247, CD27, CD3D, CD3E, CD3G, CD40LG, CD8A, CIITA, CORO1A, CTPS1, DCLRE1C, DOCK2, DOCK8, ICOS, IKBKB, IL21, IL21R, IL2RG, IL7R, ITK, JAK3, LCK, LIG4, LRBA, MAGT1, MALT1, MAP3K14, NHEJ1, PNP, PRKDC, PTPRC, RAC2, RAG1, RAG2, RFX5, RFXANK, RFXAP, RHOH, STK4, TAP1, TAP2, TAPBP, TNFRSF4, ZAP70
○ 08130.1	Add-on combined immunodeficiency (CID) with syndromic features genes	36	ACD, ATM, CHD7, CTC1, DCLRE1B, DKC1, DNMT3B, EPG5, FOXN1, NBN, NFKBIA, NHP2, NOP10, ORAI1, PARN, PGM3, PMS2, POLE, RMRP, RTEL1, SEMA3E, SMARCAL1, SP110, SPINK5, STAT3, STAT5B, STIM1, TBX1, TCN2, TERC, TERT, TINF2, TTC7A, WAS, WIPF1, ZBTB24
○ 04311	Invitae Comprehensive Severe Combined Immunodeficiency (SCID) Panel	18	ADA, AK2, CD247, CD3D, CD3E, CORO1A, DCLRE1C, IL2RG, IL7R, JAK3, LIG4, NHEJ1, PNP, PRKDC, PTPRC, RAG1, RAG2, ZAP70
○ 04311.1	Add-on combined immunodeficiency (CID) genes	32	B2M, BCL10, CARD11, CD27, CD3G, CD40LG, CD8A, CIITA, CTPS1, DOCK2, DOCK8, ICOS, IKBKB, IL21, IL21R, ITK, LCK, LRBA, MAGT1, MALT1, MAP3K14, RAC2, RFX5, RFXANK, RFXAP, RHOH, STK4, TAP1, TAP2, TAPBP, TNFRSF4, ZAP70
○ 04311.2	Add-on combined immunodeficiency (CID) with syndromic features genes	36	ACD, ATM, CHD7, CTC1, DCLRE1B, DKC1, DNMT3B, EPG5, FOXN1, NBN, NFKBIA, NHP2, NOP10, ORAI1, PARN, PGM3, PMS2, POLE, RMRP, RTEL1, SEMA3E, SMARCAL1, SP110, SPINK5, STAT3, STAT5B, STIM1, TBX1, TCN2, TERC, TERT, TINF2, TTC7A, WAS, WIPF1, ZBTB24
○ 08131	Invitae T-B-NK- Severe Combined Immunodeficiency (SCID) Panel	2	ADA, AK2
○ 08132	Invitae T-B-NK+ Severe Combined Immunodeficiency (SCID) Panel	6	DCLRE1C, LIG4, NHEJ1, PRKDC, RAG1, RAG2
○ 08133	Invitae T-B+NK- Severe Combined Immunodeficiency (SCID) Panel	2	IL2RG, JAK3
○ 08134	Invitae T-B+NK+ Severe Combined Immunodeficiency (SCID) Panel	6	CD247, CD3D, CD3E, CORO1A, IL7R, PTPRC
○ 08135	Invitae X-Linked Severe Combined Immunodeficiency (SCID) Test	1	IL2RG
○ 08136	Invitae Radiation-Sensitive Severe Combined Immunodeficiency (SCID) Panel	4	DCLRE1C, LIG4, NHEJ1, PRKDC

CLINICAL AREA: METABOLIC DISORDERS, NEWBORN SCREENING & IMMUNOLOGY

Test code	Test name	# gene(s)	Gene list
Combined T/B Cell Deficiencies (continued)			
○ 08137	Invitae Combined Immunodeficiency (CID) Panel	32	B2M, BCL10, CARD11, CD27, CD3G, CD40LG, CD8A, CIITA, CTPS1, DOCK2, DOCK8, ICOS, IKBKB, IL21, IL21R, ITK, LCK, LRBA, MAGT1, MALT1, MAP3K14, RAC2, RFX5, RFXANK, RFXAP, RHOH, STK4, TAP1, TAP2, TAPBP, TNFRSF4, ZAP70
○ 08137.1	Add-on combined immunodeficiencies (CID) with syndromic features	36	ACD, ATM, CHD7, CTC1, DCLRE1B, DKC1, DNMT3B, EPG5, FOXN1, NBN, NFKBIA, NHP2, NOP10, ORAI1, PARN, PGM3, PMS2, POLE, RMRP, RTEL1, SEMA3E, SMARCAL1, SP110, SPINK5, STAT3, STAT5B, STIM1, TBX1, TCN2, TERC, TERT, TINF2, TTC7A, WAS, WIPF1, ZBTB24
○ 08138	Invitae Syndromic Combined Immunodeficiency (CID) Panel	37	ACD, ATM, CHD7, CTC1, DCLRE1B, DKC1, DNMT3B, EPG5, FOXN1, NBN, NFKBIA, NHP2, NOP10, ORAI1, PARN, PGM3, PMS2, PNP, POLE, RMRP, RTEL1, SEMA3E, SMARCAL1, SP110, SPINK5, STAT3, STAT5B, STIM1, TBX1, TCN2, TERC, TERT, TINF2, TTC7A, WAS, WIPF1, ZBTB24
Disorders of Intrinsic and Innate Immunity			
○ 08140	Invitae Chronic Mucocutaneous Candidiasis Panel	4	IL17F, IL17RA, IL17RC, TRAF3IP2
○ 08140.1	Add-on syndromic chronic mucocutaneous candidiasis genes	7	AIRE, CARD9, IL12B, IL12RB1, RORC, STAT1, STAT3
○ 08141	Invitae Epidermodysplasia Verruciformis Panel	4	CXCR4, RHOH, TMC6, TMC8
○ 08142	Invitae Herpes Simplex Encephalitis Panel	5	TBK1, TICAM1, TLR3, TRAF3, UNC93B1
○ 08142.1	Add-on predisposition to multiple viral infections genes	2	STAT1, TYK2
○ 08143	Invitae Mendelian Susceptibility to Mycobacterial Disease Panel	16	ACP5, ADAR, CYBB, GATA2, IFNGR1, IFNGR2, IL12B, IL12RB1, IRAK4, IRF8, ISG15, MYD88, SAMHD1, STAT1, STAT2, TYK2
Immune Dysregulation			
○ 08150	Invitae Monogenic Autoimmunity Panel	73	ACP5, ADA2, ADAR, AICDA, AIRE, AP3B1, BLOC1S6, BTK, CASP10, CASP8, CD27, CD40LG, CR2, CTLA4, CYBA, CYBB, DOCK8, FADD, FAS, FASLG, FOXP3, ICOS, IFIH1, IL10, IL10RA, IL10RB, IL2RA, IL21, IL21R, ITCH, LRBA, LYST, NCF2, NCF4, NFAT5, NFKB2, NFKBIA, ORAI1, PIK3CD, PIK3R1, PLCG2, PNP, PRF1, PRKCD, RAB27A, RAC2, RFX5, RFXANK, RFXAP, RNASEH2A, RNASEH2B, RNASEH2C, RMRP, SAMHD1, SH2D1A, SLC7A7, STAT1, STAT3, STAT5B, STIM1, STX11, STXBP2, TBX1, TMEM173, TNFRSF13B, TNFRSF13C, TNFSF12, TPP2, TREX1, UNC13D, UNG, WAS, XIAP
○ 08151	Invitae Autoimmune Lymphoproliferative Disorders (ALPS) Panel	8	CASP8, CTLA4, FAS, FASLG, ITK, MAGT1, PIK3CD, PRKCD
○ 08151.1	Add-on preliminary-evidence genes	2	CASP10, FADD
○ 08152	Invitae Hereditary Hemophagocytic Lymphohistiocytosis (HLH) Disorders Panel	21	ADA, AP3B1, BLOC1S6, BTK, CD27, IL2RA, IL2RG, ITK, LYST, MAGT1, MVK, PNP, PRF1, RAB27A, SH2D1A, SLC7A7, STX11, STXBP2, UNC13D, WAS, XIAP
Phagocytic Defects			
○ 08160	Invitae Phagocyte Defects Panel	27	CEBPE, CLPB, CSF2RA, CSF3R, CTSC, CYBA, CYBB, ELANE, FERMT3, FPR1, G6PC3, G6PD, GFI1, HAX1, ITGB2, JAGN1, LAMTOR2, NCF2, NCF4, PMM2, SLC35C1, SLC37A4, SPINK5, TAZ, VPS13B, VPS45, WAS
Well-Defined Syndromes			
○ 05314	Invitae Dyskeratosis Congenita Panel	7	CTC1, DKC1, NHP2, NOP10, TERC, TERT, TINF2
○ 08170	Invitae Immunodeficiency, Centromeric Instability, Facial Anomalies Syndrome Panel	2	DNMT3B, ZBTB24

IMMUNOLOGY INDIVIDUAL GENES

○ ACD	○ CD79A	○ FAS	○ IL2RA	○ NCF4	○ RAB27A	○ STAT3	○ TRAF3
○ ACP5	○ CD79B	○ FASLG	○ IL2RG	○ NFAT5	○ RAC2	○ STAT5B	○ TRAF3IP2
○ ACTB	○ CD8A	○ FERMT3	○ IL36RN	○ NFKB2	○ RAG1	○ STIM1	○ TREX1
○ ADA	○ CEBPE	○ FOXN1	○ IL7R	○ NFKBIA	○ RAG2	○ STK4	○ TRNT1
○ ADA2	○ CHD7	○ FOXP3	○ IRAK4	○ NHEJ1	○ RBCK1	○ STX11	○ TTC7A
○ ADAM17	○ CIITA	○ FPR1	○ IRF7	○ NHP2	○ RFX5	○ STXBP2	○ TYK2
○ ADAR	○ CLPB	○ G6PC3	○ IRF8	○ NLRC4	○ RFXANK	○ TAP1	○ UNC13D
○ AICDA	○ COPA	○ G6PD	○ ISG15	○ NLRP12	○ RFXAP	○ TAP2	○ UNC93B1
○ AIRE	○ CORO1A	○ GATA2	○ ITCH	○ NLRP3	○ RHOH	○ TAPBP	○ UNG
○ AK2	○ CR2	○ GFI1	○ ITGB2	○ NOD2	○ RMRP	○ TAZ	○ VPS13B
○ AP3B1	○ CSF2RA	○ HAX1	○ ITK	○ NOP10	○ RNASEH2A	○ TBK1	○ VPS45
○ ATM	○ CSF3R	○ ICOS	○ JAGN1	○ ORAI1	○ RNASEH2B	○ TBX1	○ WAS
○ B2M	○ CTC1	○ IFIH1	○ JAK3	○ PARN	○ RNASEH2C	○ TCN2	○ WIPF1
○ BCL10	○ CTLA4	○ IFNGR1	○ LAMTOR2	○ PGM3	○ RORC	○ TERC	○ XIAP
○ BLNK	○ CTPS1	○ IFNGR2	○ LCK	○ PIK3CD	○ RTEL1	○ TERT	○ ZAP70
○ BLOC1S6	○ CTSC	○ IGLL1	○ LIG4	○ PIK3R1	○ SAMHD1	○ TFNSF12	○ ZBTB24
○ BTK	○ CXCR4	○ IKBKB	○ LPIN2	○ PLCG2	○ SEMA3E	○ TICAM1	
○ CARD11	○ CYBA	○ IL10	○ LRBA	○ PMM2	○ SH2D1A	○ TINF2	
○ CARD14	○ CYBB	○ IL10RA	○ LYST	○ PMS2	○ SH3BP2	○ TLR3	
○ CARD9	○ DCLRE1B	○ IL10RB	○ MAGT1	○ PSMB8	○ SLC29A3	○ TMC6	
○ CASP10	○ DCLRE1C	○ IL12B	○ MALT1	○ PNP	○ SLC35C1	○ TMC8	
○ CASP8	○ DKC1	○ IL12RB1	○ MAP3K14	○ POLE	○ SLC37A4	○ TMEM173	
○ CD247	○ DNMT3B	○ IL17F	○ MEFV	○ PRF1	○ SLC7A7	○ TNFRSF13B	
○ CD27	○ DOCK2	○ IL17RA	○ MOGS	○ PRKCD	○ SMARCAL1	○ TNFRSF13C	
○ CD3D	○ DOCK8	○ IL17RC	○ MVK	○ PRKDC	○ SP110	○ TNFRSF1A	
○ CD3E	○ ELANE	○ IL1RN	○ MYD88	○ PSMB8	○ SPINK5	○ TNFRSF4	
○ CD3G	○ EPG5	○ IL21	○ NBN	○ PSTPIP1	○ STAT1	○ TNFSF12	
○ CD40LG	○ FADD	○ IL21R	○ NCF2	○ PTPRC	○ STAT2	○ TPP2	

