BT8009; a Nectin-4 targeting *Bicycle*® Toxin Conjugate for treatment of solid tumors.

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Supplementary abbreviations and methods

Abbreviations:

ADC=Antibody Drug Conjugate

biw=twice a week

BTC=Bicycle Toxin Conjugate

CDX=Cell Derived Xenograft

FACS=Fluorescence Activated Cell Sorting

IHC=Immunohistochemistry

iv=intravenous

LLOQ=Lower limit of quantification

NCE=New Chemical Entity

PDX=Patient Derived Xenograft

qw=once a week

q2w=once every second week

SD=Standard Deviation

SEM=Standard Error of the Mean

ULOQ=Upper limit of quantification

Methods

Synthesis of a Nectin-4 binding antibody drug conjugate

The Nectin-4 ADC comprises an Nectin-4 binding antibody conjugated to the cytotoxin MMAE. 1C1 antibody was produced using standard methods by Genscript (Piscataway, NJ, USA), based on the coding sequence for enfortumab provided in WHO Drug Information, Vol. 28, No. 1, 2014 Recommended INN (International Nonproprietary Names for Pharmaceutical Substances): List 71. Recombinant plasmids encoding enfortumab were transiently co-transfected into Expi293F cells in culture. Supernatants were collected and purified on an affinity purification column, after washing and elution fractions were pooled, and buffer exchanged to the final formulation buffer. Purified protein was analyzed by SDS-PAGE, Western blot and SEC-HPLC for molecular weight and purity. Analysis indicated a single antibody species, consistent with the description of enfortumab/ASG-22M6, with high purity and low endotoxin levels.

Conjugation to vedotin was performed at WuXi AppTec (Shanghai, China) via cysteine conjugation with MC-VC-PAB MMAE. This provided an ADC with a molecular weight of 152 kDa and a DAR of 3.98:1

Nectin-4 Surface Plasmon Resonance (SPR) Assays

Cloning: Human Nectin-4 (residues 32-349) or Rat Nectin-4 (residues 31-347) or cynomolgus Nectin-4 (residues 32-349) or Dog Nectin-4 (residues 31-348) with a gp67 signal sequence and C-terminal FLAG tag was cloned into pFastbac-1 and baculovirus made using standard Bac-to-Bac™ protocols (Life Technologies). Mouse Nectin-4 was purchased from R&D Systems cat# 3116-N4

Biotinylation: Protein was randomly biotinylated using EZ-Link™ Sulfo-NHS-LC-LC-Biotin reagent (Thermo Fisher) as per the manufacturer's suggested protocol. The protein was extensively desalted to remove uncoupled biotin using spin columns and transferred to PBS.

Affinity determination: Streptavidin was immobilized on a CM5 (GE Healthcare) or CMD5000 (Xantec) chip using standard amine-coupling chemistry at 25°C with HBS-N (10 mM HEPES, 0.15 M NaCl, pH 7.4) as the running buffer. Briefly, the carboxymethyl dextran surface was activated with a 7 min injection of a 1:1 ratio of 0.4 M 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide hydrochloride (EDC)/0.1 M N-hydroxy succinimide (NHS) at a flow rate of 10 µl/min. Streptavidin was diluted to 0.2 mg/ml in 10 mM sodium acetate (pH 4.5) and captured by injecting 120µl onto the activated chip surface. Residual activated groups were blocked with a 7 min injection of 1 Methanolamine (pH 8.5) and biotinylated Nectin-4 captured to a level of 1,200-1,800 RU. Bicycles and BTCs were prepared in PBS/0.05% Tween 20 with a final DMSO concentration of 0.5%. SPR analysis was run on a Biacore 3000 instrument at 25°C at a flow rate of 50µl/min with association time of 60 seconds and dissociation time of between 400 and 1,200 seconds depending upon the individual peptide. Data were corrected for DMSO excluded volume

effects. All data were double referenced for blank injections and reference surface using standard processing procedures and data processing and kinetic fitting were performed using Scrubber software, version 2.0 (BioLogic Software). Data were fitted using simple 1:1 binding model allowing for mass transport effects where appropriate. SPR assays were performed at Charles Rivers Laboratories, Sandwich, UK.

Quantification of Nectin-4 Expression on CDX Cell Lines

All work was carried out at WuXi Apptec (Shanghai, China). Nectin-4 binding sites were quantified using flow cytometry (FACS). Briefly, cells at 10^6 per mL were incubated in staining buffer at 4°C with a live/dead stain (Invitrogen L10120, 1µL per 10^6 cells) and anti-human Nectin-4 antibody (R&D Systems, FAB3659P, 10µL per 10^6 cells) or the isotype control (IgG2B, R&D Systems, IC0041, 10µL per 10^6 cells), conjugated with phycoerythrin (PE), for 30 minutes, protected from light at 4°C. Cells were washed twice, resuspended in 100µL and analyzed on an Intellicyt iQue screener or BD FACS Canto II. Data were analyzed using Forecyt software. Cells were gated for viability using fluorescence intensity at 405/445nm. Mean fluorescence intensity of PE (488/572nm) for single live cells was determined and compared to known standard QuantiBRITE beads (BD #340495) to determine the number of antibody binding sites by linear regression. The antibody binding sites for the isotype control was subtracted from that obtained for Nectin-4. QuantiBRITE beads were used as per manufacturer's instructions and made up in staining buffer. Beads contain between 474 and 62336 molecules PE per bead. If the total number of antibody binding sites was determined to be below 474, <LLOQ was quoted.

Quantification of Nectin-4 Expression on PDX Cell Lines

All work was carried out at WuXi Apptec (Shanghai, China). Single cell suspensions derived from xenograft models were obtained from tumor tissue via mechanical cutting and enzymatic digestion with Accumax, before purification by density gradient centrifugation with Histopaque. Cells (10^6 per mL) were stained in staining buffer (PBS + 2% BSA) at 4°C. Briefly, rat anti-mouse CD16/CD32 (BD, #553141, 1µg per 10^6 cells) was added to cells for 15 minutes at 4˚C, to reduce non-specific binding. Cells were then incubated with live/dead stain (Invitrogen, #L10120, 1µL per 10^6 cells) and rat anti-mouse CD45 (BD, #560510, 1µg per $5x10^6$ cells) conjugated to Alexa Fluor® 700 to allow exclusion of mouse derived cells from analysis. Finally, phycoerythrin (PE) conjugated anti-human Nectin-4 (R&D Systems, FAB2659P) or the isotype control (IgG2B, R&D Systems, IC0041P) were added at 10µL per 10^6 cells for 30 minutes, protected from light at 4°C. Cells were washed twice in staining buffer, resuspended in 100µL staining buffer and analyzed immediately on an Intellicyt iQue screener or BD FACS Canto II. Data were analyzed using Forecyt software. Cells were gated for viability using fluorescence intensity at 405/445nm. Mean fluorescence intensity of PE (488/572nm) for single live cells which stained negative for mouse CD45 (640/675nm) was determined and compared to known standard QuantiBRITE beads (BD) to determine the number of antibody binding sites by linear regression. The calculated value of

antibody binding sites for the isotype control was subtracted from that obtained for Nectin-4. QuantiBRITE beads were used as per manufacturer's instructions and made up in PBS + 2% BSA. Beads contain between 474 and 62336 molecules PE per bead. If the total number of antibody binding sites was determined to be outside of this range, then LLOQ (lower limit of quantitation) or ULOQ (upper limit of quantitation) was quoted as appropriate.

Immunohistochemical detection of Nectin-4 Expression on Tumor Xenografts

Anti-Nectin-4 antibody (ab192033, abcam) was used on 4-6 µm FFPE sections in conjunction with either the Dako 48 staining platform using Dako FLEX detection kit, or the LeicabondRX platform with Polymer HRP and DAB detection. All sections were counterstained with Hematoxylin. Immunohistochemistry was performed at NovaVita Histopath Laboratory LLC (Boston, MA, USA) and WuXiAppTec (Shanghai, China).

BT8009, enfortumab vedotin or MMAE binding to MDA-MB-468 cells

All work was carried out at WuXi Apptec (Shanghai, China).

MDA-MB-468 cells were seeded in 96 well plates at $2x10^4$ cells/well and incubated at 37°C overnight. All cell staining was performed in ice cold Minimum Essential Medium Eagle (MEM) (Invitrogen, #51200038) at 4°C. Cells were rinsed in ice cold MEM between all reagent additions, unless stated otherwise. Cells were treated in duplicate wells, with an absence or presence of increasing concentrations of compound (BT8009, Nectin-4 ADC or free MMAE) (0.15nM -10µM) for 45 minutes on ice, followed by 5µg/mL anti-MMAE antibody (Mouse Anti-MMAE/F monoclonal antibody (C12A1), Levena Biopharma, LEV-MAF3-500) in MEM solution for 30 minutes. Secondary antibody (4µg/mL anti-mouse IgG conjugated with Alexa Fluor® 488 (Goat polyclonal, Abcam, ab150117)), nuclear mask (1µg/mL, HCS Nuclear Mask Blue Stain, Invitrogen, H10325) and 1µg/mL Alexa Fluor® 633 conjugated wheat germ agglutinin (membrane stain, Alexa Fluor 633 conjugate, Invitrogen, W21404) were combined and incubated with the cells for 30 minutes on ice. Following rinsing with Dulbecco's phosphate buffered saline (D-PBS) (Corning, 21-031-CVR) cells were fixed with 4% paraformaldehyde for 30 minutes on ice then finally rinsed with D-PBS before imaging in a Yokogawa CQ1 High Content Analysis System. Cell surface expression was determined by measuring the fluorescence intensity of Alex Fluor® 488 (MMAE) that was co-localized with Alexa Fluor® 633 (wheat germ agglutinin). Given the expected biological variation associated with a cell-based assay, some data points were excluded to allow appropriate curve fitting. Data were background subtracted using the formula ((Test well $_{([Cell] (Membrane) Mean Intensity CH2 (AVG))}$ - control well $_{([Cell] (Membrane) Mean Intensity CH2 (AVG))}$ where test well has been treated with compound and the control well is the mean of the two untreated wells for each test condition). Data were exported to GraphPad Prism (version 5) to fit $Y=B_{max}*X/(Kd+X)$ to determine B_{max} and

$Kd_{(apparent)}$. Where an RFU of < 10 was observed across all concentrations tested, this was not considered significant and a Kd of >10000 (top concentration tested) was reported.

Binding of biotinylated Binder to plasma membrane and secreted proteins (Retrogenix assay)

Off target binding was assessed at Retrogenix (now part of Charles River, High Peak, UK) using the biotinylated binder BCY9565 in a human plasma membrane protein cell array. For Primary screening, 5528 expression vectors, encoding both ZsGreen1 and a full-length human plasma membrane protein, or a cell-surface tethered human secreted protein, were arrayed in duplicate across 16 microarray slides ('slide-sets'). An expression vector (pIRES-hEGFR-IRES-ZsGreen1) was spotted in quadruplicate on every slide and was used to ensure that a minimal threshold of transfection efficiency had been achieved or exceeded on every slide. Human HEK293 cells were used for reverse transfection/expression. BCY9565 was added to each slide after cell fixation giving a final concentration of 1µM of each molecule. Binding to target-expressing cells and untransfected cells was assessed using an Alexa Fluor647® streptavidin detection reagent (which was added after cell fixation in both cases), followed by fluorescence imaging. Two replicate slides were screened for each of the 16 slide-sets. Fluorescent images were analyzed and quantitated (for transfection) using ImageQuant software. To confirm the hits and assess specificity, vectors encoding all hits identified in the primary screen, plus vectors encoding TGFBR2 and EGFR, were arrayed and expressed in HEK293 cells on new slides. The Confirmation/Specificity screen and analysis was carried out as for primary screening except that identical slides were treated, after cell fixation, with 1 µM of the test molecule alone, 1 µM test molecule in the presence of 200 µM of a non-biotinylated version of the test molecule (BCY8234), 1 µg/ml biotinylated anti-TGFBR2, or no test antibody/Alexa Fluor647® streptavidin only (n=2 slides per treatment). A list of the 5528 plasma membrane and secreted proteins expressed in the Retrogenix assay are included at the end of this section.

Patch clamp studies on cardiac ion channels with BCY8126

Potency of the Nectin-4 Bicycle Binder BCY8126 was assessed in Chinese hamster ovary (CHO) cells stably expressing three different cardiac ion channels, hERG, $hK_v1.5$ or $Na_v1.5$. Studies were performed at Metrion Biosciences, (Cambridge, UK). All experiments were performed on the QPatch gigaseal automated patch clamp platform. Membrane currents were elicited with different voltage protocols:

All cells passing the QC parameters (based on minimum current amplitude, membrane and series resistance and rundown) were selected as 'passed QC' using the QPatch software, which calculated the mean peak current for the last three sweeps at the end of each concentration application period from the cursor positions. Data was exported to Excel and interrogated using a bioinformatics suite developed running in Pipeline Pilot (Biovia, USA). The template calculated percent inhibition for each test concentration application period as the reduction in mean cursor value (peak current or charge) relative to the cursor value measured at the end of the control (i.e., vehicle) period. The percent inhibition

values from each cell were used to construct concentration-response curves employing a four-parameter logistic fit with 0 and 100% inhibition levels fixed at very low and very high concentrations, respectively, and a free Hill slope factor. The IC_{50} (50% inhibitory concentration) and Hill coefficient were then determined, but only data from cells with Hill slopes within 0.5> nH <2.0 were included. The IC_{50} data reported represented the mean (and S.D.) of at least three separate cells ($N \geq 3$).

hERG currents were elicited from a holding potential of -90 mV using the industry standard "+40/-40" voltage protocol applied at a stimulus frequency of 0.1 Hz. hKv1.5 currents were elicited from a holding potential of -80 mV using a 900 ms depolarising step to 0 mV. The voltage protocol was applied at a stimulus frequency of 0.2 Hz. The use-dependent inhibition of hNav1.5 was assessed with a pulse train of 10 test pulses elicited at 1 Hz. Each depolarising sweep to -20 mV (20 ms) was initiated from a holding potential of -100 mV. Each sweep of the pulse train occurred at a 60s interval. Four pulse train voltage commands were recorded for each liquid period.

BCY8126 was screened at four concentrations (using 0.5-log unit dilutions) from a top concentration of 3 µM, against a minimum of three separate cells. Each four-point concentration-response curve was constructed using cumulative single sample additions of each concentration to the same cell. Additionally, a four-point concentration-response curve was provided for reference positive control compounds for each ion channel.

Plasma protein binding and stability studies in plasma and hepatocytes

Plasma protein binding and stability was assessed in CD1 mouse, Sprague Dawley rat, cynomolgus monkey and human plasma. Stability was also assessed in human hepatocytes and liver microsomes. All studies were conducted at WuXi AppTec Co. Ltd. (Shanghai, China).

Plasma Protein Binding studies were conducted on BT8009 incubated with plasma (2µM compound) for 30min at 37°C and then either incubated for a further 2h or ultracentrifuged (470,000g) for 2h to separate unbound drug. The concentration of BT8009 was measured by LC-MS/MS analysis using a modified generic method.

Stability studies were conducted on BT8009 incubated with pooled plasma (2µM compound, for up to 24h), hepatocytes (1µM compound, $0.5x10^6$/mL cells, for up to 90 minutes) and microsomes (1µM compound, 0.5 mg/ml protein for up to 60 minutes). The incubation was stopped at pre-specified timepoints to produce a time course, and concentration of BT8009 measured by LC-MS/MS analysis using a modified generic method.

Measurement of BT8009 and MMAE in plasma

Mouse (CD-1), Rat (Sprague Dawley) and cynomolgus monkey plasma samples were analyzed for BT8009 and MMAE (free toxin) using qualified bioanalytical methods based on protein precipitation

followed by liquid chromatographic triple quadrupole mass spectrometric (LC-MS/MS) analysis. Prepared plasma samples were spiked with internal standard and analyzed after methanol extraction. Standards and controls were prepared in tumor or plasma matrices in an identical manner.

Xenograft models

Cell derived xenograft (CDX) studies were conducted in 6- to 8-week-old female BALB/c nude, or CB17-SCID, mice inoculated with~10^7 cells in the right flank. Animals were randomized when the average tumor volume reached the predesignated start size. Group size ranged from n= 3 to 6. For patient-derived xenograft (PDX) models a tumor fragment (~30 mm^3) was implanted in the right flank. Tumor volumes were measured using calipers, and the volume calculated as V (mm^3) = 0.5 (a x b^2), where a and b are the long and short diameters of the tumor, respectively. These xenograft studies were conducted at WuXi AppTec (Shanghai, China).

Further PDX xenograft studies were performed at Champions Oncology, Inc, (Hackensack, NJ, USA). Studies were conducted in 6- to 8-week-old female athymic Nude-*Foxn1*^{nu} mice implanted with a tumor fragment (~125 mm^3) in the left flank. Tumor volumes were measured using calipers and tumor volume calculated as V (mm^3) = 0.52 (a x b^2), where a and b are the long and short diameters of the tumor, respectively.

All studies included a vehicle-treated control. In all studies, vehicle used was 25mM histidine pH7 in 10% sucrose, and dosing was conducted by intravenous bolus, routinely at weekly intervals although in some studies, regimens of twice weekly or once every two weeks were also used.

All the procedures related to animal handling, care and treatment in the studies were performed according to the guidelines approved by the Institutional Animal Care and Use Committee (IACUC) of WuXi AppTec (Shanghai, China) or Champions Oncology (Hackensack, NJ, USA), following the guidance of the Association for Assessment and Accreditation of Laboratory Animal Care.

The 5528 human plasma membrane and secreted proteins in the Retrogenix assay are listed below.

A1BG	ADAM17	ADORA3	ANO10	AQP4	AZGP1	BTLA	CA14	CCER2	CD200
AADACL2	ADAM18	ADORA3	ANO10	AQP5	AZGP1	BTN1A1	CA2	CCK	CD200R1
AAK1	ADAM18	ADRA1A	ANO2	AQP6	B2M	BTN1A1	CA4	CCK	CD200R1
AAMP	ADAM2	ADRA1B	ANO4	AQP7	B2M	BTN2A1	CA6	CCKAR	CD200R1
ABCA1	ADAM20	ADRA1D	ANO4	AQP7	B4GALT1	BTN2A1	CA9	CCKBR	CD200R1
ABCA12	ADAM20	ADRA2A	ANO5	AQP8	B4GALT1	BTN2A1	CABP1	CCKBR	CD200R1L
ABCA12	ADAM21	ADRA2B	ANO6	AQP8	B4GALT1	BTN2A2	CABP2	CCL1	CD207
ABCA3	ADAM22	ADRA2C	ANO9	AQP9	B4GAT1	BTN2A2	CABP7	CCL1	CD209
ABCA4	ADAM22	ADRB1	ANOS1	ARC	BACE1	BTN2A2	CACHD1	CCL11	CD209
ABCA7	ADAM23	ADRB2	ANPEP	ARHGAP17	BACE1	BTN2A2	CACNA1S	CCL11	CD209
ABCA8	ADAM28	ADRB3	ANTXR1	ARHGEF1	BACE1	BTN3A1	CACNA1S	CCL13	CD22
ABCA8	ADAM29	ADTRP	ANTXR1	ARHGEF2	BACE1	BTN3A1	CACNA2D1	CCL13	CD22
ABCB1	ADAM30	AFM	ANTXR1	ARMH4	BACE2	BTN3A2	CACNA2D2	CCL14	CD22
ABCB4	ADAM32	AGER	ANTXR2	ARSF	BACE2	BTN3A2	CACNA2D2	CCL14	CD226
ABCB4	ADAM7	AGER	ANTXR2	ARSF	BACE2	BTN3A2	CACNA2D2	CCL15	CD24
ABCB4	ADAM8	AGER	ANTXRL	ARSI	BAGE	BTN3A3	CACNA2D3	CCL16	CD244
ABCB5	ADAM8	AGER	ANXA1	ARSJ	BAGE2	BTN3A3	CACNA2D4	CCL17	CD244
ABCB6	ADAM8	AGER	ANXA1	ARSK	BAGE3	BTNL2	CACNA2D4	CCL18	CD247
ABCC1	ADAM9	AGR2	ANXA13	ART3	BAGE4	BTNL3	CACNB1	CCL19	CD247
ABCC10	ADAM9	AGR2	ANXA13	ART3	BAGE5	BTNL8	CACNB1	CCL2	CD248
ABCC12	ADAMDEC1	AGRP	ANXA2	ART4	BAIAP2L2	BTNL9	CACNB3	CCL20	CD27
ABCC2	ADAMTS1	AGT	ANXA2	ART5	BAMBI	BVES	CACNB4	CCL21	CD274
ABCC3	ADAMTS10	AGTR1	ANXA2	ARTN	BASP1	C10orf128	CACNG1	CCL22	CD274
ABCC3	ADAMTS13	AGTR1	ANXA3	ASAH2	BCAM	C10orf54	CACNG2	CCL22	CD276
ABCC4	ADAMTS16	AGTR2	ANXA5	ASAH2	BCAN	C11orf24	CACNG2	CCL23	CD276
ABCC4	ADAMTS17	AGTRAP	ANXA6	ASGR1	BCAN	C11orf87	CACNG3	CCL24	CD28
ABCC5	ADAMTS3	AGTRAP	ANXA7	ASGR1	BCAN	C16orf89	CACNG4	CCL25	CD300A
ABCC6	ADAMTS4	AGTRAP	ANXA9	ASGR2	BCHE	C16orf89	CACNG5	CCL26	CD300C
ABCC8	ADAMTS5	AGTRAP	AOC1	ASGR2	BDKRB1	C17orf77	CACNG5	CCL27	CD300E
ABCC9	ADAMTSL2	AHCY	AOC2	ASIC1	BDKRB1	C17orf80	CACNG6	CCL28	CD300LB
ABCE1	ADAMTSL2	AHSG	AOC3	ASIC1	BDKRB2	C17orf80	CACNG7	CCL3	CD300LB
ABCG1	ADAMTSL5	AIF1L	AOC3	ASIC2	BDNF	C19orf18	CADM1	CCL3L1	CD300LD
ABCG2	ADCY3	AIF1L	AP2A2	ASIC2	BDNF	C1orf101	CADM1	CCL4	CD300LF
ABCG2	ADCy4	AIF1L	APBB1	ASIC3	BEST1	C1orf210	CADM2	CCL5	CD300LF
ABCG2	ADCY5	AJAP1	APCDD1	ASIC3	BEST1	C1orf54	CADM3	CCL7	CD300LG
ABCG8	ADCY6	AKR1A1	APCS	ASIC4	BEST1	C1QA	CADM3	CCL8	CD302
ABHD12	ADCY9	AKR1B10	APELA	ASIC5	BEST2	C1QA	CADM4	CCNYL1	CD302
ABHD12	ADCYAP1	ALCAM	APH1B	ASIC5	BEST3	C1QB	CALCA	CCR1	CD320
ABHD15	ADCYAP1R1	ALCAM	APLN	ASIP	BEST3	C1QB	CALCB	CCR1	CD320
ABHD17A	ADCYAP1R1	ALCAM	APLN	ASPN	BEST4	C1QBP	CALCR	CCR10	CD33
ABHD17B	ADCYAP1R1	ALCAM	APLNR	ASPRV1	BGLAP	C1QBP	CALCR	CCR10	CD33
ABHD2	ADD2	ALG10	APLP1	ASTN1	BGN	C1QC	CALCRL	CCR2	CD34
ABHD6	ADGRA1	ALG10B	APLP1	ATP10D	BLK	C1QL1	CALHM1	CCR2	CD36
ABI3BP	ADGRA2	ALK	APLP2	ATP10D	BMP1	C1QL1	CALN1	CCR2	CD37
ABI3BP	ADGRA3	ALKAL1	APLP2	ATP10D	BMP10	C1QL2	CALR	CCR3	CD38
ABO	ADGRB1	ALKAL2	APLP2	ATP11A	BMP10	C1QL4	CALR	CCR4	CD3D
ABRA	ADGRB3	ALOX12	APMAP	ATP11B	BMP15	C1QTNF1	CALU	CCR5	CD3E
ACE	ADGRD1	ALPI	APMAP	ATP11C	BMP2	C1QTNF12	CALY	CCR6	CD3G
ACE	ADGRD1	ALPL	APMAP	ATP13A1	BMP3	C1QTNF2	CAMK1G	CCR6	CD4
ACE	ADGRE1	ALPL	APOA1	ATP13A1	BMP4	C1QTNF3	CAMK2A	CCR7	CD4
ACE2	ADGRE1	ALPP	APOA1	ATP13A2	BMP5	C1QTNF4	CAMK2D	CCR7	CD40
ACHE	ADGRE2	ALPPL2	APOA2	ATP13A4	BMP8A	C1QTNF5	CAMK2G	CCR8	CD40
ACHE	ADGRE3	AMBN	APOA2	ATP1A1	BMP8B	C1QTNF6	CAMK2N1	CCR9	CD40
ACHE	ADGRE3	AMBP	APOA4	ATP1A2	BMP8B	C1QTNF7	CAMLG	CCR9	CD40
ACKR1	ADGRF1	AMBP	APOA5	ATP1A3	BMPER	C1QTNF8	CAMP	CCR9	CD40LG
ACKR1	ADGRF1	AMELX	APOA5	ATP1A4	BMPR1A	C1QTNF9	CANT1	CCR9	CD40LG
ACKR1	ADGRF1	AMELY	APOC1	ATP1A4	BMPR1B	C1QTNF9B	CANT1	CCRL2	CD44
ACKR2	ADGRF2	AMH	APOC1	ATP1B1	BMPR2	C1RL	CANT1	CCRL2	CD44
ACKR3	ADGRF3	AMHR2	APOC1	ATP1B2	BOC	C2	CAPG	CCRL2	CD44
ACKR3	ADGRF4	AMIGO1	APOC2	ATP1B3	BOC	C21orf63	CAPN1	CCSMST1	CD44
ACKR4	ADGRF5	AMIGO2	APOC3	ATP2B2	BPI	C3	CAPN10	CD101	CD46
ACP4	ADGRG1	AMIGO3	APOC3	ATP2B3	BPI	C3AR1	CARTPT	CD109	CD46
ACP7	ADGRG1	AMN	APOC4	ATP2B4	BPIFA1	C3AR1	CASR	CD14	CD46
ACPP	ADGRG1	AMTN	APOD	ATP2C2	BPIFA2	C4BPB	CATSPER1	CD151	CD47
ACPP	ADGRG1	AMTN	APOD	ATP4A	BPIFA3	C5AR1	CATSPER2	CD160	CD47
ACPP	ADGRG1	AMY2B	APOE	ATP4B	BPIFB1	C5AR1	CATSPER2	CD163	CD47
ACVR1	ADGRG2	ANG	APOE	ATP6AP2	BPIFB2	C5AR2	CATSPER2	CD163	CD48
ACVR1B	ADGRG2	ANGPT1	APOF	ATP6AP2	BPIFB3	C6	CATSPER3	CD163L1	CD5
ACVR1B	ADGRG2	ANGPT1	APOH	ATP6V0A2	BPIFB4	C6	CATSPER4	CD163L1	CD52
ACVR1C	ADGRG2	ANGPT1	APOL1	ATP6V0E1	BPIFB6	C6orf15	CATSPERD	CD164	CD53
ACVR1C	ADGRG3	ANGPT2	APOL1	ATP7B	BPIFC	C6orf89	CATSPERG	CD164	CD55
ACVR1C	ADGRG5	ANGPT2	APOL4	ATP9A	BRICD5	C7	CBLN1	CD164L2	CD55
ACVR2A	ADGRG7	ANGPT2	APOL4	ATP9B	BRICD5	C8A	CBLN1	CD177	CD58
ACVR2A	ADGRL1	ANGPT2	APOM	ATRAID	BRINP2	C8A	CBLN1	CD177	CD58
ACVR2B	ADGRL4	ANGPT4	APOM	ATRAID	BRS3	C8B	CBLN2	CD180	CD59
ACVRL1	ADGRL4	ANGPTL2	APOO	ATRAID	BSG	C8B	CBLN3	CD19	CD59
ADA	ADIPOQ	ANGPTL3	APP	ATRAID	BSG	C8G	CBLN3	CD19	CD5L
ADAM10	ADIPOQ	ANGPTL4	APP	ATRNL1	BSG	C8G	CBLN4	CD19	CD6
ADAM11	ADIPOR1	ANGPTL5	APP	ATRNL1	BSND	C8G	CBLN4	CD1A	CD6
ADAM12	ADIPOR2	ANGPTL6	AQP1	ATRNL1	BSPH1	C9	CCBE1	CD1A	CD6
ADAM12	ADM	ANGPTL7	AQP1	AVP	BST1	C9orf135	CCDC126	CD1B	CD63
ADAM12	ADM2	ANGPTL7	AQP1	AVPR1A	BST2	CA11	CCDC134	CD1C	CD63
ADAM12	ADM5	ANGPTL8	AQP1	AVPR1B	BTC	CA11	CCDC134	CD1D	CD68
ADAM15	ADORA1	ANKH	AQP10	AVPR2	BTD	CA12	CCDC70	CD1E	CD69
ADAM15	ADORA2A	ANKS1B	AQP2	AVPR2	BTLA	CA12	CCDC70	CD2	CD7
ADAM15	ADORA2B	ANO1	AQP3	AXL	BTLA	CA12	CCDC80	CD200	CD7

CD70	CD84	CD8B	CD99L2	CDH13	CDH26	CDHR1	CEACAM1	CEACAM5	CFB
CD72	CD84	CD8B	CD99L2	CDH15	CDH3	CDHR1	CEACAM1	CEACAM6	CFB
CD74	CD86	CD9	CD99L2	CDH15	CDH4	CDHR1	CEACAM1	CEACAM7	CFC1
CD74	CD86	CD93	CD99L2	CDH16	CDH5	CDHR2	CEACAM1	CEACAM8	
CD74	CD8A	CD96	CDCP1	CDH17	CDH5	CDHR3	CEACAM19	CELA1	
CD79A	CD8A	CD96	CDCP1	CDH18	CDH6	CDHR4	CEACAM19	CELA2A	
CD79B	CD8A	CD96	CDCP1	CDH19	CDH6	CDIPT	CEACAM20	CELA2B	
CD80	CD8B	CD97	CDCP2	CDH2	CDH7	CDNF	CEACAM21	CEND1	
CD81	CD8B	CD97	CDH1	CDH20	CDH7	CDON	CEACAM21	CER1	
CD82	CD8B	CD97	CDH11	CDH22	CDH8	CDSN	CEACAM3	CES5A	
CD83	CD8B	CD99	CDH12	CDH23	CDH9	CDSN	CEACAM4	CETP	
CFC1	CLDN1	CLMP	COL6A2	CSN1S1	CYB5D2	DHH	EDA	ENTPD5	F2R
CFC1B	CLDN10	CLPS	COL6A2	CSN2	CYBA	DHH	EDA	ENTPD6	F2R
CFD	CLDN11	CLPS	COL8A1	CSN3	CYBB	DHH	EDA	ENTPD8	F2RL1
CFH	CLDN12	CLPSL1	COL9A2	CSNK2B	CYBRD1	DHRS11	EDA	ENTPD8	F2RL1
CFHR3	CLDN14	CLPSL2	COLEC10	CSPG4	CYR61	DHRS13	EDA2R	EPB41L2	F2RL2
CFHR4	CLDN14	CLPTM1	COLEC11	CSPG5	CYSLTR1	DHRS4L2	EDAR	EPB41L3	F2RL3
CFHR5	CLDN15	CLPTM1	COLEC12	CSPG5	CYSLTR1	DHRS7B	EDDM3A	EPB41L3	F3
CFI	CLDN15	CLPTM1L	COLQ	CSPG5	CYSLTR2	DHRS7C	EDDM3B	EPB41L5	F3
CGA	CLDN15	CLRN2	COMP	CST1	CYTH1	DHRSX	EDIL3	EPCAM	F5
CGB2	CLDN16	CLSTN1	COMT	CST11	CYTL1	DIO3	EDN1	EPDR1	F5
CGB7	CLDN17	CLSTN2	COMT	CST2	CYTL1	DIO3	EDN2	EPDR1	F5
CHAD	CLDN18	CLSTN3	CORIN	CST3	CYYR1	DIRAS1	EDN3	EPDR1	F5
CHGA	CLDN18	CMA1	CORT	CST3	DAG1	DIRAS2	EDNRA	EPGN	F7
CHGB	CLDN19	CMKLR1	CPA1	CST4	DAGLA	DIRAS3	EDNRB	EPGN	F7
CHI3L2	CLDN19	CMKLR1	CPA2	CST5	DAGLB	DISP1	EFEMP2	EPHA1	F8
CHIA	CLDN2	CMTM2	CPA4	CST6	DAND5	DKK1	EFNA1	EPHA10	F8
CHIC2	CLDN20	CMTM3	CPA6	CST7	DAPP1	DKK1	EFNA2	EPHA10	F9
CHID1	CLDN22	CMTM4	CPB2	CST8	DCBLD1	DKK2	EFNA3	EPHA10	F9
CHIT1	CLDN23	CMTM5	CPD	CST9	DCBLD2	DKK3	EFNA4	EPHA2	FADS2
CHODL	CLDN24	CMTM5	CPE	CST9L	DCC	DKK4	EFNA5	EPHA3	FAIM2
CHODL	CLDN25	CMTM6	CPE	CSTL1	DCD	DKKL1	EFNB1	EPHA3	FAM127A
CHRDL2	CLDN3	CMTM7	CPLX3	CTF1	DCLK1	DLG2	EFNB2	EPHA3	FAM168B
CHRFAM7A	CLDN34	CNDP1	CPM	CTGF	DCSTAMP	DLG3	EFNB3	EPHA4	FAM168B
CHRFAM7A	CLDN4	CNGA1	CPN1	CTGF	DDR1	DLG4	EFR3A	EPHA4	FAM171A1
CHRM1	CLDN5	CNGA2	CPN2	CTHRC1	DDR1	DLK1	EGF	EPHA5	FAM171A2
CHRM1	CLDN6	CNGA3	CPQ	CTLA4	DDR2	DLK2	EGFL7	EPHA6	FAM171B
CHRM1	CLDN7	CNGA3	CPXM1	CTLA4	DEAF1	DLK2	EGFL8	EPHA7	FAM171B
CHRM2	CLDN8	CNGA3	CPZ	CTNNA1	DEFA1B	DLL1	EGFLAM	EPHA7	FAM172A
CHRM3	CLDN9	CNGA4	CR2	CTNS	DEFA3	DLL3	EGFR	EPHA8	FAM174A
CHRM3	CLDND1	CNGB1	CR2	CTRB1	DEFA3	DLL4	EGFR	EPHA8	FAM174B
CHRM4	CLEC10A	CNGB3	CRB1	CTRB2	DEFA4	DMD	EGFR	EPHB1	FAM180A
CHRM5	CLEC10A	CNMD	CRB2	CTSB	DEFA5	DMKN	EGFR	EPHB2	FAM187B
CHRNA1	CLEC11A	CNNM1	CRB3	CTSB	DEFA5	DMP1	EGFR	EPHB3	FAM198A
CHRNA1	CLEC12A	CNNM2	CREG1	CUTA	DEFA6	DNAJB4	ELFN1	EPHB4	FAM198B
CHRNA10	CLEC12B	CNNM4	CREG2	CUZD1	DEFB1	DNAJC16	ELSPBP1	EPHB6	FAM198B
CHRNA2	CLEC12B	CNP	CRELD1	CX3CL1	DEFB106B	DNASE1	EMB	EPHX4	FAM198B
CHRNA3	CLEC14A	CNPY4	CRELD2	CX3CL1	DEFB107B	DNASE1L2	EMC1	EPO	FAM19A1
CHRNA3	CLEC14A	CNPY4	CRH	CX3CL1	DEFB108B	DNASE1L3	EMC10	EPOR	FAM19A3
CHRNA3	CLEC15B	CNR1	CRHBP	CX3CR1	DEFB108B	DNER	EMC10	EPPIN	FAM19A4
CHRNA4	CLEC17A	CNR1	CRHBP	CX3CR1	DEFB110	DPCR1	EMC7	EPYC	FAM19A5
CHRNA4	CLEC18B	CNR2	CRHR1	CXADR	DEFB110	DPEP1	EMCN	ERAS	FAM200A
CHRNA4	CLEC18C	CNST	CRHR1	CXADR	DEFB112	DPEP2	EMCN	ERBB2	FAM209A
CHRNA5	CLEC1A	CNST	CRHR2	CXCL1	DEFB112	DPP10	EMID1	ERBB3	FAM209B
CHRNA6	CLEC1B	CNTFR	CRIM1	CXCL1	DEFB113	DPP4	EMILIN1	ERBB3	FAM20A
CHRNA7	CLEC1B	CNTN1	CRIM1	CXCL10	DEFB113	DPP6	EMP1	ERBB3	FAM20C
CHRNA7	CLEC2A	CNTN2	CRISP2	CXCL10	DEFB114	DPP7	EMP2	ERBB3	FAM213A
CHRNA9	CLEC2B	CNTN4	CRISPLD1	CXCL11	DEFB115	DPT	EMP2	ERBB4	FAM234A
CHRNB1	CLEC2D	CNTN4	CRISPLD2	CXCL12	DEFB115	DRAXIN	ENAM	ERBB4	FAM24A
CHRNB2	CLEC2D	CNTN6	CRLF2	CXCL13	DEFB116	DRD1	ENDOD1	EREG	FAM24B
CHRNB3	CLEC2D	CNTNAP1	CRLF2	CXCL14	DEFB116	DRD2	ENDOU	ERFE	FAM26F
CHRNB4	CLEC2D	CNTNAP2	CRLF3	CXCL16	DEFB118	DRD3	ENG	ERMAP	FAM3A
CHRND	CLEC3A	CNTNAP3	CRP	CXCL16	DEFB119	DRD4	ENHO	ERVFRD-1	FAM3B
CHRNE	CLEC3B	CNTNAP3B	CRTAC1	CXCL16	DEFB121	DRD5	ENO1	ERVH48-1	FAM3D
CHRNG	CLEC4A	CNTNAP5	CRTAC1	CXCL17	DEFB123	DSC1	ENO2	ERVW-1	FAM3D
CHRNG	CLEC4C	COCH	CRTAM	CXCL2	DEFB124	DSC2	ENOX1	ESAM	FAM57A
CHST9	CLEC4D	COL10A1	CRTAP	CXCL3	DEFB124	DSG1	ENOX1	ESM1	FAM65B
CHSY1	CLEC4E	COL13A1	CRTAP	CXCL3	DEFB125	DSG2	ENOX2	ESR1	FAP
CKAP4	CLEC4F	COL15A1	CSF1	CXCL5	DEFB126	DSG3	ENOX2	EVA1C	FAS
CKLF	CLEC4F	COL17A1	CSF1	CXCL6	DEFB127	DSG3	ENPP1	EVC	FAS
CKLF	CLEC4G	COL19A1	CSF1R	CXCL8	DEFB128	DUOX1	ENPP1	EVI2A	FAS
CLC	CLEC4G	COL1A1	CSF2	CXCL9	DEFB129	DUOX2	ENPP1	EVI2A	FAS
CLC	CLEC4M	COL1A1	CSF2RA	CXCR1	DEFB130A	DUOXA1	ENPP2	EVI2A	FAS
CLCA1	CLEC4M	COL1A2	CSF2RA	CXCR1	DEFB131A	DUOXA1	ENPP3	EVI2B	FAS
CLCA1	CLEC5A	COL1A2	CSF2RA	CXCR2	DEFB131B	DUOXA2		EXTL2	FAS
CLCA2	CLEC6A	COL20A1	CSF2RA	CXCR2	DEFB132	DUSP15	ENPP3	EXTL2	FASLG
CLCA2	CLEC6A	COL23A1	CSF2RB	CXCR3	DEFB133	DUSP15	ENPP4	F10	FASLG
CLCA4	CLEC7A	COL23A1	CSF2RB	CXCR3	DEFB134	DYNAP	ENPP5	F10	FBLN5
CLCF1	CLEC7A	COL25A1	CSF3	CXCR4	DEFB135	EBAG9	ENPP5	F11	FBLN7
CLCF1	CLEC7A	COL25A1	CSF3R	CXCR4	DEFB135	EBI3	ENPP6	F11	FCAMR
CLCN2	CLEC7A	COL25A1	CSF3R	CXCR5	DEFB135	EBI3	ENPP7	F11R	FCAR
CLCN2	CLEC9A	COL25A1	CSF3R	CXCR5	DEFB136	ECE1	ENTPD1	F12	FCAR
CLCN3	CLECL1	COL26A1	CSF3R	CXCR6	DEFB136	ECM1	ENTPD1	F13A1	FCAR
CLCN4	CLIC1	COL6A1	CSH1	CXCR6	DES	ECM2	ENTPD2	F13B	FCAR
CLCNKB	CLIC4	COL6A2	CSHL1	CXorf61	DGCR2	ECSCR	ENTPD3	F2	FCAR
CLCNKB	CLMP	COL6A2	CSMD2	CXorf66	DGKB	EDA	ENTPD3	F2	FCAR

FCAR	FGFRL1	GABRB2	GIF	GPC5	GPR6	GZMA	HRH2	IFNG	IL17RA
FCAR	FGG	GABRB3	GINM1	GPC5	GPR61	GZMK	HRH2	IFNGR1	IL17RB
FCAR	FGG	GABRB3	GIP	GPC6	GPR62	GZMM	HRH3	IFNGR2	IL17RC
FCER1A	FGL1	GABRD	GIPR	GPC6	GPR63	HAMP	HRH4	IFNGR2	IL17RC
FCER1G	FIBCD1	GABRE	GJA1	GPER1	GPR65	HAPLN1	HS6ST1	IFNK	IL17RD
FCER1G	FIBIN	GABRE	GJA10	GPER1	GPR65	HAPLN2	HSD11B1L	IFNK	IL17RD
FCER2	FITM1	GABRG1	GJA3	GPHA2	GPR68	HAPLN3	HSD17B11	IFNL1	IL17RE
FCER2	FITM2	GABRG2	GJA3	GPHB5	GPR68	HAPLN3	HSD17B13	IFNL2	IL17RE
FCGR1A	FJX1	GABRG3	GJA4	GPIHBP1	GPR75	HAPLN4	HSD17B7	IFNL3	IL18
FCGR1B	FLNB	GABRP	GJA5	GPLD1	GPR78	HAS1	HSPB6	IFNL4	IL18
FCGR1B	FLOT1	GABRQ	GJA8	GPLD1	GPR82	HAS2	HTN1	IFNLR1	IL18BP
FCGR2A	FLRT1	GABRR1	GJA9	GPLD1	GPR83	HAS2	HTN3	IFNLR1	IL18R1
FCGR2A	FLRT1	GABRR1	GJB1	GPM6A	GPR84	HAS3	HTR1A	IFNW1	IL18RAP
FCGR2B	FLRT1	GABRR1	GJB2	GPM6B	GPR84	HAS3	HTR1B	IGDCC3	IL19
FCGR2B	FLRT1	GABRR2	GJB3	GPM6B	GPR85	HAS3	HTR1D	IGDCC4	IL1A
FCGR2C	FLRT2	GABRR2	GJB4	GPNMB	GPR85	HAVCR1	HTR1D	IGF1	IL1A
FCGR3A	FLRT2	GABRR3	GJB5	GPNMB	GPR87	HAVCR2	HTR1E	IGF1R	IL1B
FCGR3A	FLRT3	GAD2	GJB6	GPNMB	GPR88	HBEGF	HTR1F	IGF2	IL1B
FCGR3A	FLRT3	GAL	GJB7	GPR1	GPR89B	HCAR1	HTR2A	IGFALS	IL1F10
FCGR3B	FLRT3	GALNT1	GJC1	GPR101	GPRC5A	HCAR1	HTR2A	IGFBP1	IL1R1
FCGR3B	FLT1	GALNT2	GJC2	GPR108	GPRC5B	HCAR2	HTR2B	IGFBP2	IL1R1
FCGRT	FLT1	GALNT2	GJC3	GPR119	GPRC5C	HCAR3	HTR2C	IGFBP3	IL1R2
FCMR	FLT3	GALP	GJD2	GPR12	GPRC5C	HCG22	HTR3A	IGFBP4	IL1R2
FCMR	FLT3LG	GALP	GJD3	GPR132	GPRC5C	HCK	HTR3A	IGFBP5	IL1R2
FCMR	FLT4	GALR1	GJD4	GPR132	GPRC5C	HCN1	HTR3B	IGFBP6	IL1RAP
FCN1	FLVCR1	GALR2	GKN1	GPR135	GPRC5D	HCN1	HTR3C	IGFBP7	IL1RAP
FCN1	FLVCR2	GALR3	GKN2	GPR137	GPRC6A	HCN3	HTR3C	IGFBPL1	IL1RAP
FCN2	FMO5	GAST	GKN2	GPR137B	GPX3	HCN4	HTR3D	IGFL1	IL1RAPL2
FCN3	FMR1NB	GATD1	GLB1L	GPR137C	GPX5	HCN4	HTR3D	IGFL2	IL1RL1
FCRL1	FNDC10	GBP1	GLB1L2	GPR137C	GPX7	HCRTR1	HTR3E	IGFL3	IL1RL1
FCRL2	FNDC4	GBP1	GLDN	GPR139	GREM1	HCRTR2	HTR3E	IGFL4	IL1RL1
FCRL2	FNDC4	GBP1	GLG1	GPR141	GREM2	HCST	HTR4	IGFLR1	IL1RL2
FCRL2	FNDC5	GC	GLG1	GPR142	GRIA1	HEPACAM	HTR5A	IGHA1	IL1RL2
FCRL3	FNDC5	GC	GLIPR1L2	GPR143	GRIA2	HEPH	HTR6	IGHD	IL1RN
FCRL3	FNDC5	GCG	GLIPR1L2	GPR143	GRIA3	HEPHL1	HTR7	IGHG3	IL1RN
FCRL4	FOLH1	GCG	GLP1R	GPR146	GRIA3	HFE	HTR7	IGHM	IL1RN
FCRL5	FOLH1	GCGR	GLP2R	GPR148	GRIA4	HFE	HTRA1	IGIP	IL2
FCRL6	FOLH1	GCNT7	GLRA1	GPR149	GRID1	HFE	HTRA4	IGLL1	IL20
FCRLA	FOLR1	GDF1	GLRA1	GPR15	GRID1	HFE2	HVCN1	IGLL1	IL20RA
FDCSP	FOLR1	GDF10	GLRA2	GPR150	GRIK1	HFE2	HYAL1	IGLL5	IL20RA
FETUB	FOLR2	GDF11	GLRA2	GPR151	GRIK1	HFE2	HYAL2	IGLL5	IL20RB
FFAR1	FOLR2	GDF15	GLRA3	GPR151	GRIK1	HGFAC	HYAL3	IGLON5	IL21
FFAR2	FOLR3	GDF2	GLRA4	GPR152	GRIK2	HHIP	HYAL4	IGSF1	IL21R
FFAR3	FPR1	GDF2	GLRB	GPR153	GRIK2	HHLA1	IAPP	IGSF1	IL22
FFAR4	FPR2	GDF3	GML	GPR156	GRIK3	HHLA2	IBSP	IGSF1	IL22RA1
FGA	FPR2	GDF5	GNA11	GPR157	GRIK4	HIDE1	ICAM1	IGSF11	IL22RA2
FGB	FPR3	GDF6	GNA13	GPR158	GRIK5	HIGD1B	ICAM2	IGSF11	IL23A
FGB	FRZB	GDF9	GNA15	GPR160	GRIN1	HIGD1C	ICAM2	IGSF23	IL23A
FGF1	FSHB	GDNF	GNAS	GPR161	GRIN1	HILPDA	ICAM3	IGSF3	IL23R
FGF10	FSHR	GDPD1	GNAS	GPR162	GRIN2A	HILPDA	ICAM4	IGSF5	IL24
FGF10	FSTL1	GDPD1	GNAS	GPR162	GRIN2B	HLA-A	ICAM4	IGSF6	IL25
FGF16	FSTL3	GDPD2	GNAS	GPR17	GRIN2C	HLA-B	ICAM4	IGSF8	IL26
FGF17	FUCA2	GDPD3	GNB1	GPR17	GRIN2C	HLA-C	ICAM5	IGSF9	IL26
FGF18	FURIN	GDPD4	GNB3	GPR171	GRIN2D	HLA-DOA	ICOS	IGSF9	IL27
FGF18	FURIN	GDPD5	GNB4	GPR173	GRIN3A	HLA-DOB	ICOS	IHH	IL27RA
FGF19	FXYD1	GDPD5	GNG11	GPR173	GRK7	HLA-DPA1	ICOSLG	IHH	IL2RA
FGF20	FXYD2	GFOD1	GNG12	GPR176	GRM1	HLA-DPB1	IDE	IHH	IL2RB
FGF21	FXYD3	GFOD2	GNG5	GPR18	GRM2	HLA-DQA1	IDE	IL10	IL2RG
FGF22	FXYD4	GFRA1	GNG7	GPR182	GRM3	HLA-DQA2	IER3	IL10RA	IL3
FGF23	FXYD5	GFRA1	GNG7	GPR182	GRM3	HLA-DQB1	IFI30	IL10RB	IL31
FGF3	FXYD6	GFRA2	GNGT1	GPR183	GRM4	HLA-DQB2	IFI30	IL11	IL31RA
FGF4	FXYD6	GFRA3	GNLY	GPR183	GRM5	HLA-DRA	IFITM1	IL11RA	IL31RA
FGF5	FXYD7	GFRA4	GNPTG	GPR20	GRM5	HLA-DRB1	IFITM10	IL11RA	IL31RA
FGF6	FZD1	GFRA4	GNRH1	GPR21	GRM6	HLA-DRB3	IFITM2	IL11RA	IL32
FGF6	FZD10	GFRA4	GNRH2	GPR22	GRM7	HLA-DRB4	IFITM3	IL12A	IL33
FGF7	FZD2	GFRAL	GNRHR	GPR25	GRM8	HLA-DRB5	IFITM5	IL12B	IL34
FGF8	FZD4	GGH	GP1BA	GPR26	GRN	HLA-E	IFNA10	IL12B	IL36A
FGF9	FZD5	GGH	GP1BB	GPR27	GRP	HLA-F	IFNA14	IL12B	IL36B
FGFBP1	FZD6	GGT1	GP2	GPR3	GRPR	HLA-G	IFNA16	IL12RB1	IL36G
FGFBP1	FZD7	GGT1	GP2	GPR3	GSG1L	HMGB1	IFNA16	IL12RB1	IL36RN
FGFBP2	FZD8	GGT2	GP5	GPR31	GSG1L	HMGB2	IFNA16	IL12RB2	IL37
FGFBP2	FZD9	GGT5	GP6	GPR32	GSG1L	HMMR	IFNA17	IL13	IL3RA
FGFBP3	G6B	GGT5	GP9	GPR33	GSG1L2	HMMR	IFNA2	IL13RA1	IL3RA
FGFR1	G6PD	GGT5	GPA33	GPR34	GUCA2A	HMSD	IFNA21	IL13RA2	IL4
FGFR1	GABBR1	GGT6	GPBAR1	GPR34	GUCA2A	HNRNPA2B	IFNA4	IL15	IL4R
FGFR1	GABBR1	GGT7	GPC1	GPR35	GUCA2B	1	IFNA5	IL15	IL4R
FGFR1	GABBR1	GGTLC1	GPC1	GPR37	GUCY2C	HOMER1	IFNA6	IL15RA	IL5
FGFR1	GABBR1	GGTLC2	GPC2	GPR37L1	GUCY2C	HOMER2	IFNA7	IL15RA	IL5RA
FGFR2	GABBR2	GH1	GPC2	GPR39	GUCY2D	HOMER3	IFNA8	IL15RA	IL5RA
FGFR2	GABRA1	GH2	GPC2	GPR4	GUCY2F	HP	IFNAR1	IL16	IL6
FGFR2	GABRA3	GHRH	GPC2	GPR42	GYPA	HPN	IFNAR2	IL17A	IL6
FGFR3	GABRA4	GHRHR	GPC2	GPR45	GYPB	HPSE	IFNAR2	IL17B	IL6R
FGFR3	GABRA5	GHRL	GPC3	GPR50	GYPC	HPSE2	IFNAR2	IL17C	IL6R
FGFR3	GABRA6	GHSR	GPC3	GPR52	GYPC	HPX	IFNB1	IL17D	IL6R
FGFR4	GABRB1	GHSR	GPC4	GPR55	GYPE	HRG	IFNE	IL17D	IL6ST
FGFR4	GABRB2	GHSR	GPC4	GPR55	GZMA	HRH1	IFNG	IL17F	IL6ST

IL6ST	JTB	KCNQ1	KLRF2	LHFPL5	LRRC15	LYZL6	MFSD4B	MSLN	NECTIN2
IL7	KARS	KCNQ2	KLRG1	LIF	LRRC19	M	MFSD8	MSLN	NECTIN2
IL7R	KCNA1	KCNQ2	KLRK1	LIFR	LRRC25	M6PR	MFSD9	MSLN	NECTIN3
IL9	KCNA10	KCNQ3	KNG1	LILRA1	LRRC26	MADCAM1	MGAT4A	MSLN	NECTIN3
IL9R	KCNA2	KCNQ4	KNG1	LILRA2	LRRC32	MADCAM1	MGP	MSLN	NECTIN4
IL9R	KCNA2	KCNQ4	KRAS	LILRA2	LRRC37B	MAG	MIA	MSLN	NECTIN4
ILDR1	KCNA3	KCNQ5	KREMEN1	LILRA3	LRRC4	MAGEE1	MICA	MSMB	NEGR1
ILDR1	KCNA4	KCNS1	KREMEN2	LILRA3	LRRC4	MAGT1	MICB	MSMP	NEGR1
IMPG1	KCNA5	KCNS2	KREMEN2	LILRA4	LRRC4B	MAL	MICB	MSN	NELL2
INHBB	KCNA5	KCNS3	KRT19	LILRA5	LRRC4C	MAL	MIF	MSR1	NELL2
INHBC	KCNA6	KCNT1	KRTDAP	LILRA5	LRRC52	MAL	MILR1	MST1R	NENF
INPP5D	KCNAB2	KCNT1	L1CAM	LILRA6	LRRC8A	MAL2	MIP	MSTN	NETO1
INS	KCNAB2	KCNT1	LACRT	LILRB1	LRRC8B	MALL	MLANA	MTNR1A	NETO1
INSL3	KCNB1	KCNT2	LAG3	LILRB1	LRRC8B	MAMDC4	MLN	MTNR1A	NETO2
INSL4	KCND1	KCNV1	LAG3	LILRB2	LRRC8C	MANF	MLNR	MTNR1B	NETO2
INSL5	KCND2	KCNV2	LAIR1	LILRB3	LRRC8D	MANF	MME	MTRNR2L1	NETO2
INSL6	KCNE1	KCT2	LAIR2	LILRB4	LRRC8E	MANSC1	MMEL1	MTRNR2L1	NEU1
INSR	KCNE2	KCTD12	LAIR2	LILRB5	LRRN1	MARCH6	MMP10	0	NEU1
INSR	KCNE3	KDR	LALBA	LIM2	LRRN2	MARCKSL1	MMP11	MTRNR2L2	NFAM1
INSRR	KCNE4	KEL	LALBA	LIM2	LRRN3	MARCKSL1	MMP12	MTRNR2L3	NFASC
ISG15	KCNE5	KIAA0319	LAMA4	LIME1	LRRN4	MARCO	MMP13	MTRNR2L4	NGEF
ISLR	KCNG1	KIAA0319L	LAMA4	LIMS2	LRRN4CL	MARVELD1	MMP14	MTRNR2L5	NGF
ISLR2	KCNG1	KIAA0319L	LAMC1	LINGO1	LRRTM1	MARVELD1	MMP15	MTRNR2L6	NGFR
ISM1	KCNG3	KIAA1161	LAMC2	LINGO1	LRRTM2	MARVELD2	MMP15	MTRNR2L7	NGRN
ISM2	KCNG4	KIAA1324	LAMC3	LINGO2	LRRTM3	MARVELD3	MMP16	MTRNR2L8	NINJ1
ITFG1	KCNG4	KIAA1324	LAMP1	LINGO3	LRRTM3	MARVELD3	MMP17	MTRNR2L9	NINJ2
ITGA10	KCNH1	KIAA1324L	LAMP2	LINGO4	LRRTM4	MAS1	MMP19	MTUS1	NINJ2
ITGA11	KCNH2	KIAA2013	LAMP5	LIPC	LRRTM4	MAS1L	MMP2	MTUS1	NIPA1
ITGA2	KCNH3	KIR2DL1	LAPTM4B	LIPC	LRTM1	MATN3	MMP20	MUC1	NIPA1
ITGA2B	KCNH4	KIR2DL1	LAT	LIPF	LRTM2	MBL2	MMP21	MUC1	NIPA1
ITGA3	KCNH5	KIR2DL2	LAT	LIPG	LSAMP	MC1R	MMP24	MUC1	NIPA2
ITGA4	KCNH6	KIR2DL3	LAT	LIPH	LSAMP	MC1R	MMP25	MUC1	NIPAL1
ITGA5	KCNH6	KIR2DL4	LAT2	LIPH	LSP1	MC2R	MMP26	MUC1	NIPAL4
ITGA6	KCNH7	KIR2DL5A	LAX1	LIPI	LSR	MC3R	MMP28	MUC1	NKAIN1
ITGA7	KCNH8	KIR2DL5B	LAX1	LIPI	LST1	MC3R	MMP3	MUC1	NKAIN2
ITGA7	KCNIP1	KIR2DS1	LAYN	LIPK	LTA	MC4R	MMP7	MUC1	NKAIN2
ITGA8	KCNIP2	KIR2DS2	LAYN	LIPM	LTA	MC4R	MMP8	MUC13	NKAIN3
ITGA9	KCNIP3	KIR2DS2	LBP	LIPN	LTA	MC5R	MMP9	MUC13	NKAIN4
ITGAD	KCNJ1	KIR2DS3	LBP	LLCFC1	LTB	MCAM	MMRN1	MUC15	NKD2
ITGAE	KCNJ1	KIR2DS4	LCAT	LMBR1	LTB4R	MCEMP1	MMRN1	MUC15	NKG7
ITGAL	KCNJ10	KIR2DS5	LCAT	LMBR1L	LTB4R2	MCHR1	MMRN2	MUC20	NLGN1
ITGAL	KCNJ11	KIR3DL1	LCK	LMBR1L	LTBR	MCHR1	MOG	MUC20	NLGN2
ITGAM	KCNJ11	KIR3DL2	LCN1	LMBRD1	LTF	MCHR2	MOG	MUC21	NLGN3
ITGAM	KCNJ12	KIR3DL3	LCN12	LMBRD1	LTF	MCOLN1	MPEG1	MUC4	NLGN4X
ITGAM	KCNJ13	KIR3DS1	LCN15	LMBRD2	LTK	MCOLN2	MPIG6B	MUC4	NLGN4Y
ITGAV	KCNJ14	KIR3DS1	LCN2	LNPEP	LUZP2	MCOLN3	MPL	MUC7	NLRP3
ITGAV	KCNJ15	KIRREL	LCN6	LNPEP	LY6D	MCOLN3	MPZ	MUCL1	NMB
ITGAV	KCNJ16	KIRREL2	LCN8	LOX	LY6E	MDGA1	MPZ	MUSK	NMBR
ITGB1	KCNJ16	KIRREL2	LCN9	LOXL2	LY6G5B	MDGA2	MPZL1	MXRA8	NMBR
ITGB1	KCNJ18	KIRREL3	LCN9	LOXL4	LY6G5B	MDK	MPZL2	MYADM	NMS
ITGB1	KCNJ2	KIRREL3	LCN9	LPAR1	LY6G5C	MDK	MPZL3	MYADM	NMS
ITGB1	KCNJ3	KISS1	LCP1	LPAR1	LY6G5C	MEGF10	MR1	MYDGF	NMU
ITGB2	KCNJ4	KISS1	LCT	LPAR2	LY6G6C	MEGF10	MR1	MYOF	NMUR1
ITGB3	KCNJ5	KISS1R	LCTL	LPAR3	LY6G6D	MEGF11	MR1	MZB1	NMUR2
ITGB3	KCNJ6	KIT	LDLR	LPAR4	LY6G6F	MEGF6	MRAP	NAALAD2	NODAL
ITGB5	KCNJ6	KIT	LDLR	LPAR5	LY6H	MEGF9	MRAP	NAALADL1	NOG
ITGB6	KCNJ8	KITLG	LDLRAD2	LPAR5	LY6K	MELTF	MRAS	NAALADL2	NOMO1
ITGB7	KCNJ9	KITLG	LDLRAD3	LPAR6	LY86	MEP1A	MRC2	NAALADL2	NOMO3
ITGB8	KCNJ9	KL	LEAP2	LPAR6	LY86	MEP1B	MRC2	NAE1	NOTCH1
ITGBL1	KCNK1	KLB	LECT1	LPL	LY9	MEP1B	MRGPRD	NALCN	NOTCH2
ITGBL1	KCNK10	KLK10	LECT2	LPL	LY9	MEPE	MRGPRD	NAMPT	NOTCH2NL
ITIH1	KCNK12	KLK11	LEFTY1	LRCH3	LY9	MERTK	MRGPRE	NAPSA	NOTCH2NL
ITIH2	KCNK13	KLK12	LEFTY2	LRCH3	LY96	MERTK	MRGPRE	NAXD	NOTCH3
ITLN1	KCNK16	KLK13	LEP	LRFN1	LY96	MET	MRGPRF	NAXE	NOTCH4
ITLN1	KCNK17	KLK14	LEPR	LRFN2	LYG1	METRN	MRGPRG	NBL1	NOTUM
ITLN2	KCNK2	KLK15	LEPR	LRFN3	LYG2	METRNL	MRGPRX1	NCAM1	NOV
ITM2A	KCNK2	KLK3	LEPR	LRFN4	LYNX1	METRNL	MRGPRX2	NCAN	NOX1
ITM2B	KCNK4	KLK3	LGALS1	LRFN5	LYPD1	METTL24	MRGPRX2	NCMAP	NOX3
ITM2B	KCNK5	KLK4	LGALS1	LRG1	LYPD1	MFAP2	MRGPRX3	NCMAP	NOX4
ITM2C	KCNK6	KLK5	LGALS1	LRIG1	LYPD2	MFAP3	MRGPRX3	NCR1	NOX5
ITPRIPL1	KCNK7	KLK6	LGALS3	LRIG1	LYPD3	MFAP3L	MRGPRX3	NCR1	NPB
ITPRIPL2	KCNK7	KLK6	LGALS3	LRIG2	LYPD4	MFAP3L	MRGPRX4	NCR2	NPBWR1
IYD	KCNK7	KLK7	LGALS9	LRP1	LYPD4	MFAP3L	MS4A1	NCR3	NPBWR2
IZUMO1	KCNK9	KLK7	LGALS9	LRP10	LYPD5	MFAP4	MS4A10	NCR3LG1	NPC1L1
IZUMO2	KCNMA1	KLK8	LGI2	LRP11	LYPD5	MFAP5	MS4A12	NCSTN	NPC2
IZUMO2	KCNMB1	KLK9	LGI3	LRP12	LYPD6	MFGE8	MS4A2	NCSTN	NPC2
IZUMO3	KCNMB1	KLKB1	LGI4	LRP3	LYPD6B	MFGE8	MS4A2	NDFIP1	NPFF
IZUMO4	KCNMB3	KLKB1	LGR4	LRP4	LYPD6B	MFGE8	MS4A3	NDFIP1	NPFF
JAG1	KCNMB3	KLRB1	LGR5	LRP5	LYPD6B	MFGE8	MS4A4A	NDFIP2	NPFFR1
JAG2	KCNMB4	KLRC1	LGR6	LRP6	LYPD8	MFI2	MS4A5	NDFIP2	NPFFR2
JAM2	KCNN1	KLRC1	LHB	LRP6	LYSMD3	MFRP	MS4A6A	NDNF	NPHS1
JAM3	KCNN2	KLRC2	LHCGR	LRP8	LYSMD3	MFSD10	MS4A6E	NDP	NPIPB15
JAM3	KCNN2	KLRC3	LHFPL2	LRP8	LYSMD4	MFSD14B	MS4A6E	NECTIN1	NPPA
JAML	KCNN3	KLRC4	LHFPL3	LRP8	LYVE1	MFSD14B	MS4A7	NECTIN1	NPPB
JAML	KCNN3	KLRD1	LHFPL3	LRP8	LYZ	MFSD2A	MS4A8	NECTIN1	NPR1
JCHAIN	KCNN4	KLRF1	LHFPL4	LRP8	LYZL4	MFSD2A	MSLN	NECTIN1	NPR2

NPR3	NXPH1	OR5K1	PANX3	PCOLCE	PLA1A	PPBP	PSG4	RAET1L	RS1
NPR3	NXPH2	OR5M9	PAPLN	PCOLCE2	PLA2G10	PPIA	PSG5	RAMP1	RS1
NPS	NXPH3	OR5P2	PAQR4	PCSK1N	PLA2G12A	PPIA	PSG5	RAMP2	RSPO1
NPS	NXPH4	OR5P3	PAQR5	PCSK2	PLA2G12A	PPM1L	PSG6	RAMP3	RSPO2
NPSR1	NYX	OR5P3	PAQR5	PCSK5	PLA2G12B	PPM1L	PSG7	RARRES2	RSPO3
NPSR1	NYX	OR5V1	PAQR6	PCSK7	PLA2G1B	PPP1R3F	PSG8	RBP4	RSPO3
NPTN	OAS1	OR6C2	PAQR6	PCSK7	PLA2G2A	PPT1	PSG9	RECK	RSPO4
NPTN	OBP2A	OR6C3	PAQR6	PCSK9	PLA2G2A	PPT1	PSORS1C2	RECK	RSPRY1
NPTXR	OCA2	OR7C2	PAQR7	PCYOX1	PLA2G2C	PPY	PSPN	REEP2	RTBDN
NPVF	OCA2	OR7D2	PAQR8	PCYOX1L	PLA2G2D	PRADC1	PSPN	REEP2	RTN4R
NPW	OCLN	OR7E24	PAQR8	PDCD1	PLA2G2D	PRAP1	PSPN	REG1A	RTN4R
NPY	OCSTAMP	OR8D2	PAQR9	PDCD1LG2	PLA2G2E	PRB2	PTAFR	REG1B	RTN4R
NPY1R	ODAM	OR8G1	PARD6A	PDCD6IP	PLA2G2E	PRB3	PTAFR	REG3A	RTN4RL1
NPY2R	ODAPH	OR8U8	PARM1	PDGFA	PLA2G2F	PRCD	PTCH1	REG3A	RTN4RL2
NPY4R	OGN	OR9G1	PATE1	PDGFB	PLA2G3	PRELP	PTCH1	REG3G	RTP1
NPY5R	OIT3	ORAI1	PATE2	PDGFB	PLA2G3	PRELP	PTCH2	REG4	RTP1
NPY6R	OLFM1	ORAI2	PATE3	PDGFC	PLA2G3	PRF1	PTCRA	REG4	RTP2
NRAC	OLFM3	ORAI3	PCDH1	PDGFD	PLA2G5	PRF1	PTCRA	RELL1	RXFP1
NRCAM	OLFM4	ORM1	PCDH1	PDGFRA	PLA2G5	PRG2	PTEN	RELL2	RXFP1
NRCAM	OLFM4	ORM2	PCDH10	PDGFRA	PLA2G7	PRIMA1	PTGDR	RELT	RXFP1
NRG1	OLFML1	OSCAR	PCDH10	PDGFRA	PLA2R1	PRKCA	PTGDR2	REN	RXFP2
NRG1	OLFML2A	OSCAR	PCDH11Y	PDGFRB	PLA2R1	PRKCH	PTGDS	RESP18	RXFP3
NRG1	OLFML2B	OSCAR	PCDH17	PDGFRL	PLAC1	PRL	PTGER1	RET	RXFP4
NRG1	OLR1	OSCAR	PCDH18	PDIA6	PLAC9	PRL	PTGER2	RET	RYK
NRG1	OLR1	OSCAR	PCDH20	PDLIM5	PLAT	PRLH	PTGER3	RETN	RYK
NRG1	OMD	OSCP1	PCDH8	PDLIM5	PLAU	PRLHR	PTGER3	RETNLB	S100A12
NRG1	OMG	OSM	PCDH8	PDLIM5	PLAU	PRLR	PTGER3	RFTN2	S100A13
NRG1	OOSP2	OSMR	PCDH9	PDLIM5	PLAUR	PRLR	PTGER3	RGMA	S100A7
NRG2	OPALIN	OSMR	PCDHA1	PDLIM5	PLAUR	PRMT8	PTGER4	RGMB	S100A7
NRG2	OPN1LW	OSTC	PCDHA1	PDPN	PLAUR	PRMT8	PTGFR	RGMB	S100A8
NRG2	OPN1LW	OSTN	PCDHA10	PDPN	PLAUR	PRND	PTGFRN	RGR	S100A8
NRG2	OPN1MW	OTOA	PCDHA10	PDPN	PLB1	PRNP	PTGIR	RGS9BP	S100A9
NRG3	OPN1SW	OTOL1	PCDHA10	PDPN	PLB1	PROC	PTH	RHAG	S100A9
NRG3	OPN1SW	OTOP1	PCDHA13	PDYN	PLB1	PROCR	PTH1R	RHBDD1	S1PR1
NRG4	OPN1SW	OTOP1	PCDHA2	PDYN	PLGLB2	PROK1	PTH2	RHBDD2	S1PR2
NRN1	OPN3	OTOR	PCDHA2	PEAR1	PLGRKT	PROK2	PTH2R	RHBDD2	S1PR3
NRN1L	OPN4	OTOS	PCDHA3	PECAM1	PLLP	PROKR1	PTHLH	RHBDL2	S1PR4
NRP1	OPN5	OVCH1	PCDHA4	PERP	PLP1	PROKR2	PTK7	RHBG	S1PR5
NRP1	OPRD1	OXER1	PCDHA6	PF4	PLP2	PROM1	PTK7	RHCE	S1PR5
NRP1	OPRK1	OXGR1	PCDHA6	PF4V1	PLPP1	PROM1	PTN	RHCG	S1PR5
NRP1	OPRL1	OXT	PCDHA6	PGA4	PLPP2	PROM2	PTPRA	RHD	SAA1
NRP2	OPRM1	OXTR	PCDHA7	PGA5	PLPP3	PROZ	PTPRB	RHD	SAA2
NRP2	OPRPN	P2RX1	PCDHA7	PGC	PLPP7	PRR27	PTPRC	RHEB	SAA4
NRP2	OPTC	P2RX2	PCDHA8	PGF	PLSCR1	PRR4	PTPRCAP	RHO	SAMD1
NRP2	OR10G3	P2RX2	PCDHA9	PGLYRP1	PLSCR1	PRR7	PTPRD	RHO	SBSN
NRP2	OR10T2	P2RX3	PCDHAC2	PGLYRP2	PLSCR2	PRR7	PTPRE	RLN1	SBSPON
NRROS	OR10W1	P2RX4	PCDHB1	PGLYRP2	PLSCR2	PRRG1	PTPRF	RLN2	SCAMP5
NRSN2	OR11A1	P2RX4	PCDHB10	PGLYRP3	PLSCR3	PRRG2	PTPRG	RLN3	SCAMP5
NRTN	OR11G2	P2RX5	PCDHB11	PGLYRP4	PLSCR4	PRRG3	PTPRH	RNASE1	SCARA3
NRXN1	OR13C4	P2RX5	PCDHB12	PHEX	PLTP	PRRG4	PTPRJ	RNASE1	SCARA3
NRXN3	OR13C8	P2RX5	PCDHB13	PHEX	PLVAP	PRRT1	PTPRJ	RNASE10	SCARA5
NRXN3	OR13C9	P2RX6	PCDHB14	PI15	PLXDC1	PRRT1	PTPRK	RNASE11	SCARA5
NRXN3	OR14A16	P2RX6	PCDHB15	PI16	PLXDC2	PRRT2	PTPRM	RNASE12	SCARB1
NSG1	OR1D5	P2RX7	PCDHB16	PI16	PLXDC2	PRRT3	PTPRN	RNASE13	SCARB1
NT5E	OR1E1	P2RX7	PCDHB2	PI16	PLXNA1	PRSS1	PTPRN	RNASE3	SCARF1
NT5E	OR1G1	P2RY1	PCDHB3	PI3	PLXNA1	PRSS2	PTPRN2	RNASE4	SCG2
NT5E	OR1J2	P2RY10	PCDHB4	PI3	PLXNA2	PRSS21	PTPRO	RNASE6	SCG3
NTF3	OR1J4	P2RY11	PCDHB5	PIANP	PLXNA4	PRSS22	PTPRO	RNASE6	SCG5
NTF4	OR1N1	P2RY12	PCDHB6	PIBF1	PLXNA4	PRSS22	PTPRO	RNASE7	SCG5
NTM	OR2C3	P2RY12	PCDHB7	PIEZO1	PLXNB1	PRSS23	PTPRR	RNASE8	SCG5
NTM	OR2L13	P2RY12	PCDHB8	PIEZO1	PLXNB2	PRSS27	PTPRS	RNASE9	SCGB1A1
NTN1	OR2M4	P2RY12	PCDHB9	PIGBOS1	PLXNC1	PRSS33	PTPRS	RNASET2	SCGB1A1
NTN3	OR2T1	P2RY13	PCDHGA10	PIGF	PLXND1	PRSS35	PTPRT	RNF130	SCGB1C1
NTN4	OR2T35	P2RY13	PCDHGA11	PIGO	PM20D1	PRSS36	PTPRT	RNF130	SCGB1C2
NTN4	OR3A2	P2RY14	PCDHGA12	PIGP	PMCH	PRSS37	PTTG1IP	RNF150	SCGB1D1
NTN5	OR3A3	P2RY14	PCDHGA2	PIGQ	PMP22	PRSS38	PTX3	RNF150	SCGB1D2
NTNG1	OR4C45	P2RY2	PCDHGA3	PIGR	PNLDC1	PRSS42	PTX4	RNF180	SCGB1D4
NTNG1	OR4D2	P2RY2	PCDHGA4	PIGU	PNLIP	PRSS48	PVR	RNF180	SCGB2B2
NTNG2	OR4E2	P2RY2	PCDHGA5	PIGZ	PNLIPRP1	PRSS53	PVR	RNF215	SCGB3A1
NTNG2	OR4N2	P2RY4	PCDHGA6	PIK3IP1	PNLIPRP3	PRSS54	PVRIG	RNF43	SCGB3A2
NTRK1	OR4Q3	P2RY4	PCDHGA8	PILRA	PNOC	PRSS55	PVRL3	RNF43	SCGN
NTRK1	OR4S2	P2RY6	PCDHGA8	PILRA	PNPLA2	PRSS57	PXDN	RNFT2	SCGN
NTRK1	OR51A2	P2RY6	PCDHGA9	PILRA	PODN	PRSS58	PXK	RNFT2	SCIMP
NTRK2	OR51B6	P2RY6	PCDHGB1	PILRA	PODNL1	PRSS8	PYM1	RNLS	SCN10A
NTRK2	OR51E1	P2RY6	PCDHGB2	PILRB	PODXL	PRTN3	PYY	RNPEP	SCN1B
NTRK3	OR51L1	P2RY8	PCDHGB3	PILRB	PODXL	PSAP	QPCT	ROBO2	SCN1B
NTRK3	OR51V1	P2RY8	PCDHGB4	PILRB	PODXL2	PSAP	QRFP	ROBO3	SCN1B
NTRK3	OR52A1	P2RY8	PCDHGB6	PIP	POMC	PSAPL1	QRFP	ROBO3	SCN1B
NTS	OR52A5	P4HB	PCDHGB6	PKD1L2	PON1	PSCA	QRFPR	ROBO4	SCN2B
NTSR1	OR52I1	PAEP	PCDHGB7	PKD1L2	PON3	PSEN1	QRFPR	ROR1	SCN4A
NTSR2	OR52M1	PAG1	PCDHGC3	PKD1L2	POPDC2	PSEN2	QSOX1	ROR1	SCN4B
NTSR2	OR5AC2	PAG1	PCDHGC3	PKD2	POPDC3	PSENEN	R3HDML	ROR2	SCN4B
NUCB1	OR5D14	PANX1	PCDHGC3	PKD2L1	PORCN	PSG1	RAET1E	ROS1	SCN5A
NXPE1	OR5D16	PANX1	PCDHGC4	PKD2L2	PORCN	PSG11	RAET1E	RPSA	SCN5A
NXPE3	OR5H1	PANX2	PCDHGC5	PKD2L2	POTED	PSG2	RAET1G	RRAS2	SCN9A
NXPE4	OR5J2	PANX2	PCOLCE	PKDCC	PPBP	PSG3	RAET1G	RRH	SCN9A

SCNN1A	SERPINI2	SLC13A1	SLC26A5	SLC3A2	SLC6A7	SORT1	STX1A	TBXA2R	TM4SF4
SCNN1B	SEZ6	SLC13A2	SLC26A6	SLC40A1	SLC6A8	SOST	STX3	TCN2	TM4SF5
SCNN1D	SEZ6L	SLC13A2	SLC26A7	SLC40A1	SLC6A9	SOSTDC1	STX4	TCTA	TM7SF3
SCNN1D	SEZ6L2	SLC13A3	SLC26A8	SLC41A1	SLC6A9	SPA17	STXBP3	TCTN1	TM9SF2
SCNN1G	SFN	SLC13A3	SLC27A1	SLC41A2	SLC7A1	SPACA1	STYK1	TCTN2	TMC1
SCPEP1	SFRP1	SLC13A4	SLC27A3	SLC41A2	SLC7A10	SPACA3	SUCNR1	TCTN2	TMC2
SCRG1	SFRP2	SLC13A5	SLC27A4	SLC41A3	SLC7A11	SPACA4	SULF1	TCTN3	TMC3
SCRG1	SFRP2	SLC14A1	SLC27A6	SLC41A3	SLC7A13	SPACA6	SUSD1	TDGF1	TMC4
SCRG1	SFRP2	SLC15A1	SLC28A1	SLC43A1	SLC7A2	SPACA7	SUSD2	TDGF1	TMC5
SCT	SFRP4	SLC15A2	SLC28A1	SLC43A2	SLC7A2	SPAG11B	SUSD3	TECTB	TMC5
SCT	SFRP4	SLC15A3	SLC28A1	SLC43A2	SLC7A3	SPAM1	SUSD4	TECTB	TMC7
SCTR	SFRP5	SLC16A1	SLC28A2	SLC43A3	SLC7A5	SPARCL1	SUSD4	TEK	TMC7
SCUBE1	SFTA2	SLC16A1	SLC28A3	SLC44A2	SLC7A6	SPATA6	SUSD4	TEPP	TMC7
SCUBE1	SFTA3	SLC16A10	SLC29A1	SLC44A2	SLC7A7	SPCS1	SUSD5	TEX101	TMED1
SCUBE2	SFTPA1	SLC16A10	SLC29A2	SLC44A3	SLC7A8	SPG11	SUSD6	TEX101	TMEFF1
SDC1	SFTPA2	SLC16A14	SLC29A3	SLC44A3	SLC7A8	SPG11	SV2A	TEX264	TMEFF2
SDC1	SFTPB	SLC16A3	SLC29A4	SLC44A4	SLC7A9	SPG11	SV2A	TEX29	TMEFF2
SDC2	SFTPC	SLC16A4	SLC2A1	SLC44A4	SLC8A1	SPINK1	SV2B	TF	TMEM106A
SDC3	SFTPC	SLC16A4	SLC2A10	SLC44A5	SLC8A2	SPINK1	SV2C	TFF1	TMEM108
SDC4	SFTPD	SLC16A5	SLC2A11	SLC45A2	SLC8A3	SPINK13	SVBP	TFF2	TMEM120A
SDC4	SGCA	SLC16A6	SLC2A12	SLC45A2	SLC8A3	SPINK14	SYNDIG1	TFPI	TMEM123
SDCBP	SGCB	SLC16A7	SLC2A13	SLC45A3	SLC8B1	SPINK2	SYNDIG1	TFPI	TMEM130
SDCBP	SGCD	SLC16A8	SLC2A2	SLC46A1	SLC9A1	SPINK2	SYNDIG1L	TFPI	TMEM130
SDCBP	SGCD	SLC17A3	SLC2A2	SLC46A1	SLC9A1	SPINK4	SYNGR2	TFPI2	TMEM130
SDF2	SGCE	SLC17A4	SLC2A3	SLC46A2	SLC9A2	SPINK5	SYNGR4	TFPI2	TMEM130
SDF2	SGCG	SLC17A4	SLC2A4	SLC46A3	SLC9A3	SPINK6	SYT14	TFR2	TMEM132A
SDK1	SGCZ	SLC17A7	SLC2A5	SLC46A3	SLC9A3R1	SPINK7	SYT14	TFR2	TMEM132B
SEC23B	SGCZ	SLC18A1	SLC2A5	SLC47A1	SLC9A5	SPINK8	SYT15	TFRC	TMEM132D
SEC61G	SHBG	SLC18A2	SLC2A6	SLC47A1	SLC9A6	SPINK9	SYT15	TFRC	TMEM134
SECTM1	SHISA2	SLC18B1	SLC2A7	SLC47A2	SLC9A7	SPINT1	SYT15	TGFA	TMEM139
SECTM1	SHISA4	SLC19A1	SLC2A8	SLC4A1	SLC9B1	SPINT1	SYT8	TGFA	TMEM140
SELE	SHISA5	SLC19A1	SLC2A9	SLC4A10	SLCO1A2	SPINT1	TAAR1	TGFA	TMEM150A
SELENOP	SHISAL1	SLC19A2	SLC2A9	SLC4A2	SLCO1A2	SPINT2	TAAR2	TGFB2	TMEM150A
SELL	SIDT1	SLC19A3	SLC2A9	SLC4A2	SLCO1A2	SPINT3	TAAR2	TGFB3	TMEM150A
SELL	SIGIRR	SLC1A1	SLC30A1	SLC4A2	SLCO1B1	SPINT4	TAAR3P	TGFBI	TMEM154
SELP	SIGLEC1	SLC1A2	SLC30A10	SLC4A4	SLCO1B3	SPN	TAAR5	TGFBI	TMEM155
SELP	SIGLEC10	SLC1A3	SLC30A5	SLC4A7	SLCO1B7	SPNS3	TAAR6	TGFBR1	TMEM161A
SELPLG	SIGLEC10	SLC1A4	SLC30A5	SLC4A8	SLCO1C1	SPOCK1	TAAR8	TGFBR1	TMEM163
SEMA3A	SIGLEC11	SLC1A5	SLC30A6	SLC4A8	SLCO2A1	SPOCK3	TAAR9	TGFBR2	TMEM167A
SEMA3B	SIGLEC11	SLC1A6	SLC30A7	SLC50A1	SLCO2B1	SPON1	TAC1	TGFBR2	TMEM167B
SEMA3B	SIGLEC12	SLC1A6	SLC30A8	Slc51a	SLCO3A1	SPON2	TAC1	TGFBR3	TMEM169
SEMA3C	SIGLEC14	SLC1A7	SLC30A8	SLC51A	SLCO3A1	SPP1	TAC3	TGFBR3	TMEM173
SEMA3E	SIGLEC15	SLC1A7	SLC31A1	SLC51B	SLCO4A1	SPRED1	TAC4	TGFBR3L	TMEM178A
SEMA3F	SIGLEC15	SLC20A2	SLC31A1	SLC51B	SLCO4C1	SPRED1	TACR1	TGM2	TMEM182
SEMA4A	SIGLEC5	SLC22A1	SLC31A2	SLC52A1	SLCO5A1	SPX	TACR1	TGM2	TMEM182
SEMA4C	SIGLEC6	SLC22A1	SLC33A1	SLC52A3	SLCO5A1	SRGN	TACR2	TGOLN2	TMEM184B
SEMA4D	SIGLEC6	SLC22A10	SLC34A1	SLC5A1	SLCO6A1	SRGN	TACR3	TGOLN2	TMEM190
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SEMA4G	SIGLEC8	SLC22A12	SLC34A3	SLC5A10	SLIT1	SRPX	TAGLN2	THEM6	TMEM198
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SEMA6D	SIRPA	SLC22A16	SLC36A1	SLC5A12	SLITRK2	SSPN	TARM1	THSD1	TMEM206
SEMA6D	SIRPA	SLC22A17	SLC36A2	SLC5A2	SLITRK3	SST	TAS1R1	THSD4	TMEM213
SEMA7A	SIRPA	SLC22A18	SLC36A2	SLC5A3	SLITRK4	SSTR1	TAS1R1	THY1	TMEM222
SEMG1	SIRPB1	SLC22A2	SLC36A3	SLC5A4	SLITRK5	SSTR1	TAS1R2	THY1	TMEM222
SEMG2	SIRPB1	SLC22A23	SLC36A4	SLC5A5	SLITRK6	SSTR2	TAS1R3	TICAM2	TMEM222
SEPW1	SIRPB1	SLC22A23	SLC38A1	SLC5A6	SLMAP	SSTR3	TAS2R1	TIE1	TMEM229B
SERBP1	SIRPB2	SLC22A25	SLC38A2	SLC5A7	SLPI	SSTR4	TAS2R10	TIGIT	TMEM25
SERBP1	SIRPD	SLC22A4	SLC38A2	SLC5A8	SLURP1	SSTR5	TAS2R13	TIMD4	TMEM25
SERINC1	SIRPD	SLC22A5	SLC38A3	SLC5A9	SLURP2	ST14	TAS2R14	TIMP1	TMEM25
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SERPINA1	SLAMF1	SLC22A8	SLC38A6	SLC6A11	SMAGP	ST3GAL3	TAS2R19	TIMP3	TMEM39A
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SERPINA3	SLAMF7	SLC23A1	SLC39A1	SLC6A14	SMIM7	C6	TAS2R30	TINAG	TMEM47
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SERPINB5	SLC10A5	SLC26A1	SLC39A5	SLC6A19	SMR3B	STEAP1B	TAS2R43	TLR5	TMEM79
SERPINB5	SLC10A6	SLC26A11	SLC39A6	SLC6A2	SNAP23	STEAP2	TAS2R45	TLR6	TMEM81
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SERPINC1	SLC11A2	SLC26A2	SLC39A8	SLC6A3	SNCA	STIM1	TAS2R5	TLR8	TMEM86B
SERPINE1	SLC12A1	SLC26A3	SLC39A9	SLC6A4	SNORC	STIM2	TAS2R50	TLR9	TMEM86B
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SERPINE3	SLC12A3	SLC26A5	SLC3A1	SLC6A5	SORBS1	STOML1	TAS2R7	TM4SF1	TMEM89
SERPINF1	SLC12A6	SLC26A5	SLC3A2	SLC6A6	SORBS1	STOML3	TAS2R7	TM4SF1	TMEM8A
SERPINF2	SLC12A8	SLC26A5	SLC3A2	SLC6A6	SORD	STRA6	TAS2R8	TM4SF18	TMEM8B
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