

Bazy danych wykorzystywane w analizie wyników badań cytogenetycznych

Beata Nowakowska

Instytut Matki i Dziecka

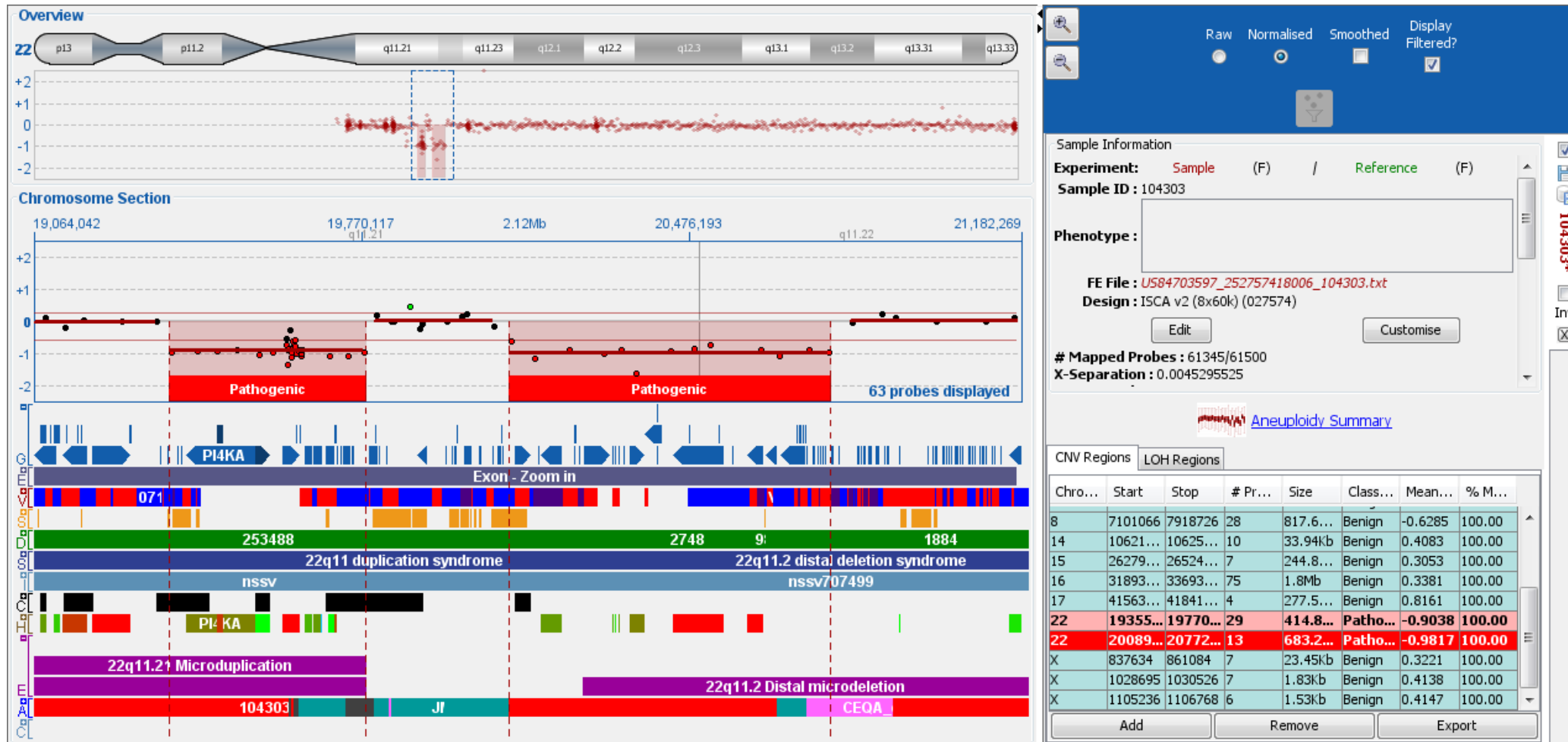
Zakład Genetyki Medycznej

Zespół Pracowni Cytogenetyki

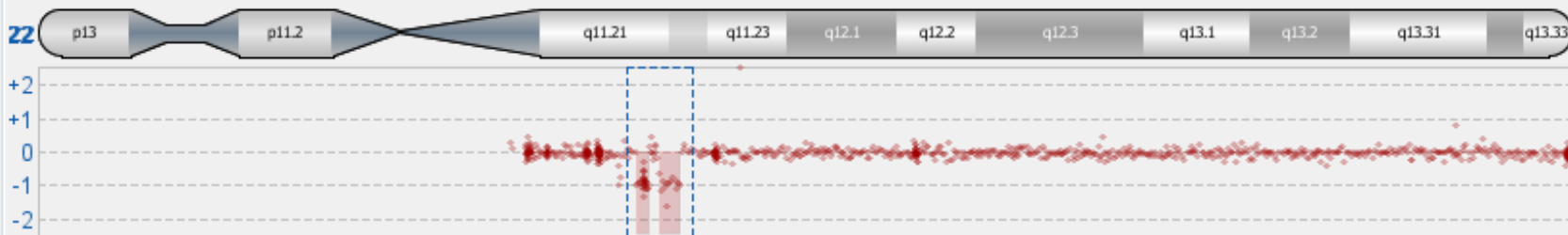


Table 2. List of Online Resources Used in CMA Results Interpretation.		
Name	Abbreviation	Website
Database of Genomic Variants	DGV	http://projects.tcag.ca/variation
Database of Chromosomal Imbalance and Phenotype in Humans using Ensembl Resources	DECIPHER	https://decipher.sanger.ac.uk/application
Database of Genotype and phenotype	dbGaP	http://www.ncbi.nlm.nih.gov/gap
Database of Structural Variation	dbVar	http://www.ncbi.nlm.nih.gov/dbvar
European Cytogeneticists Association Register of Unbalanced Chromosome Aberrations	ECARUCA	http://www.ECARUCA.net
Genomic Oligoarray and SNP array evaluation tool		http://www.ccs.miami.edu/cgi-bin/ROH/ROH_analysis_tool.cgi
International Standards for Cytogenomic Arrays Consortium	ISCA	https://www.iscaconsortium.org
NCBI Nucleotide		http://www.ncbi.nlm.nih.gov/nucleotide
NCBI Online Mendelian Inheritance in Man	OMIM	http://www.ncbi.nlm.nih.gov/omim
NCBI PubMed	PubMed	http://www.ncbi.nlm.nih.gov/PubMed
USCS Genome Browser	UCSC	http://genome.ucsc.edu/cgi-bin/hgGateway
Prenatal Array		http://prenatalarray.org

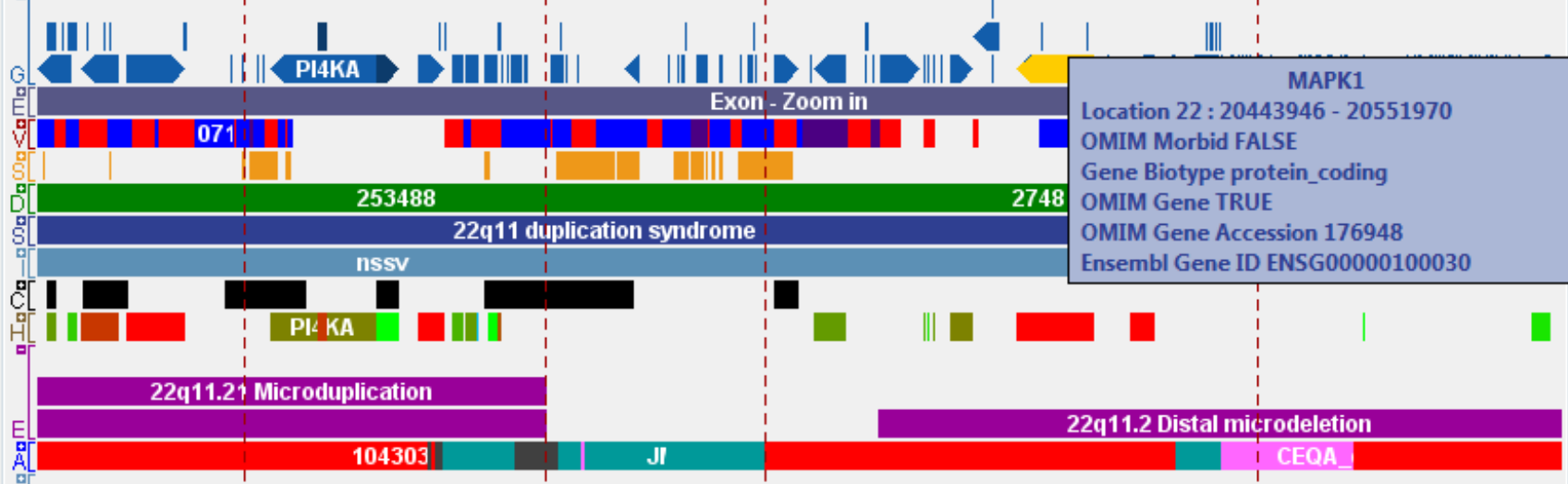
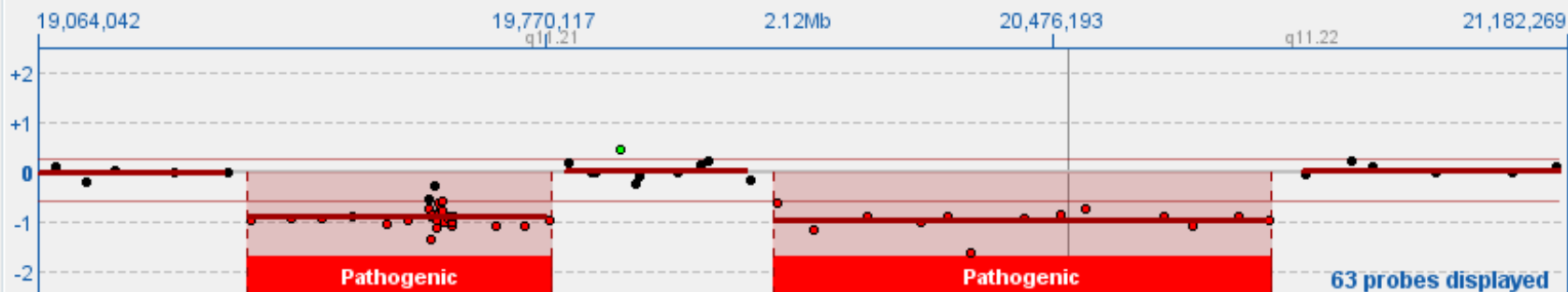
CytoSure Oxford Gene Technology



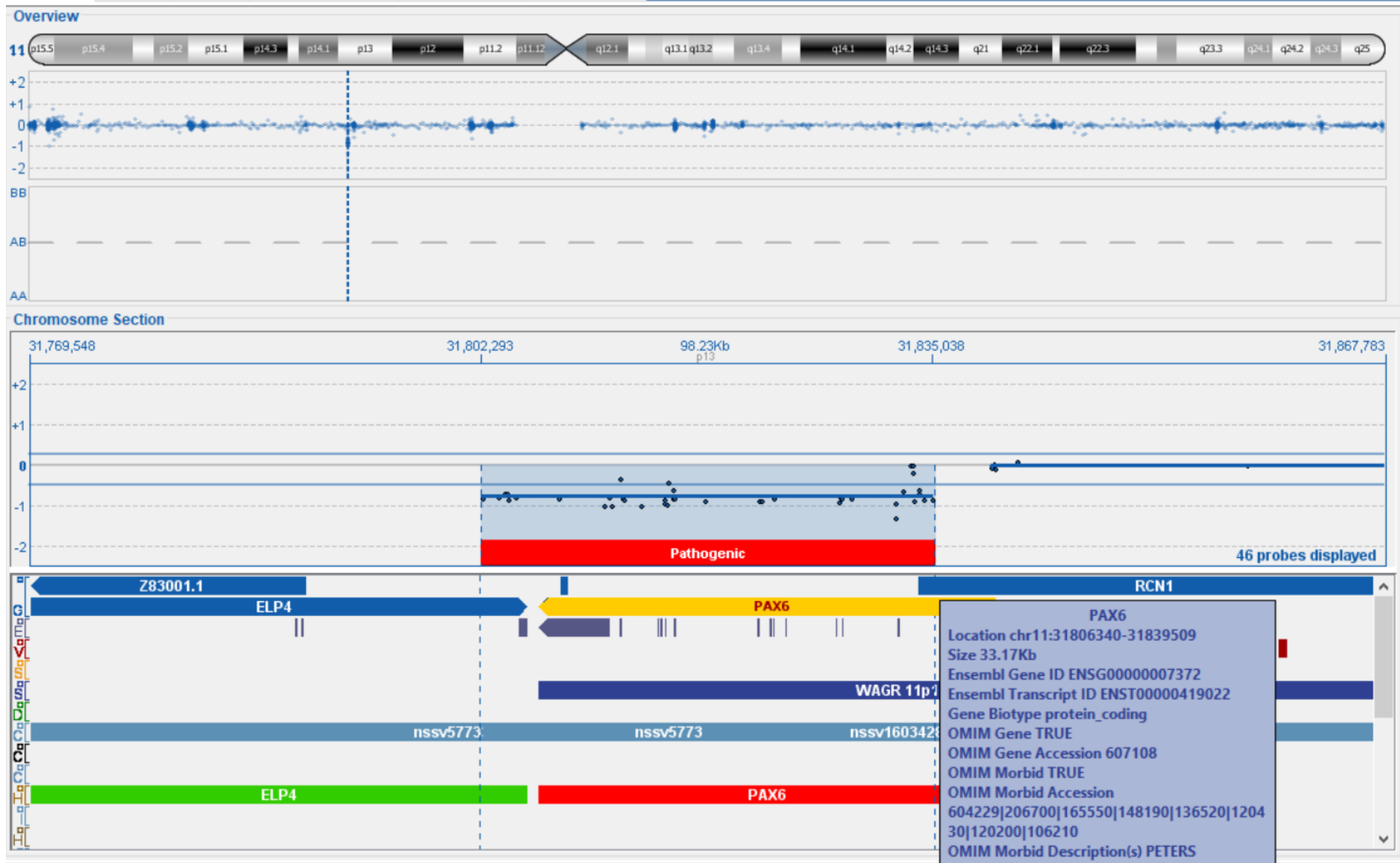
Overview

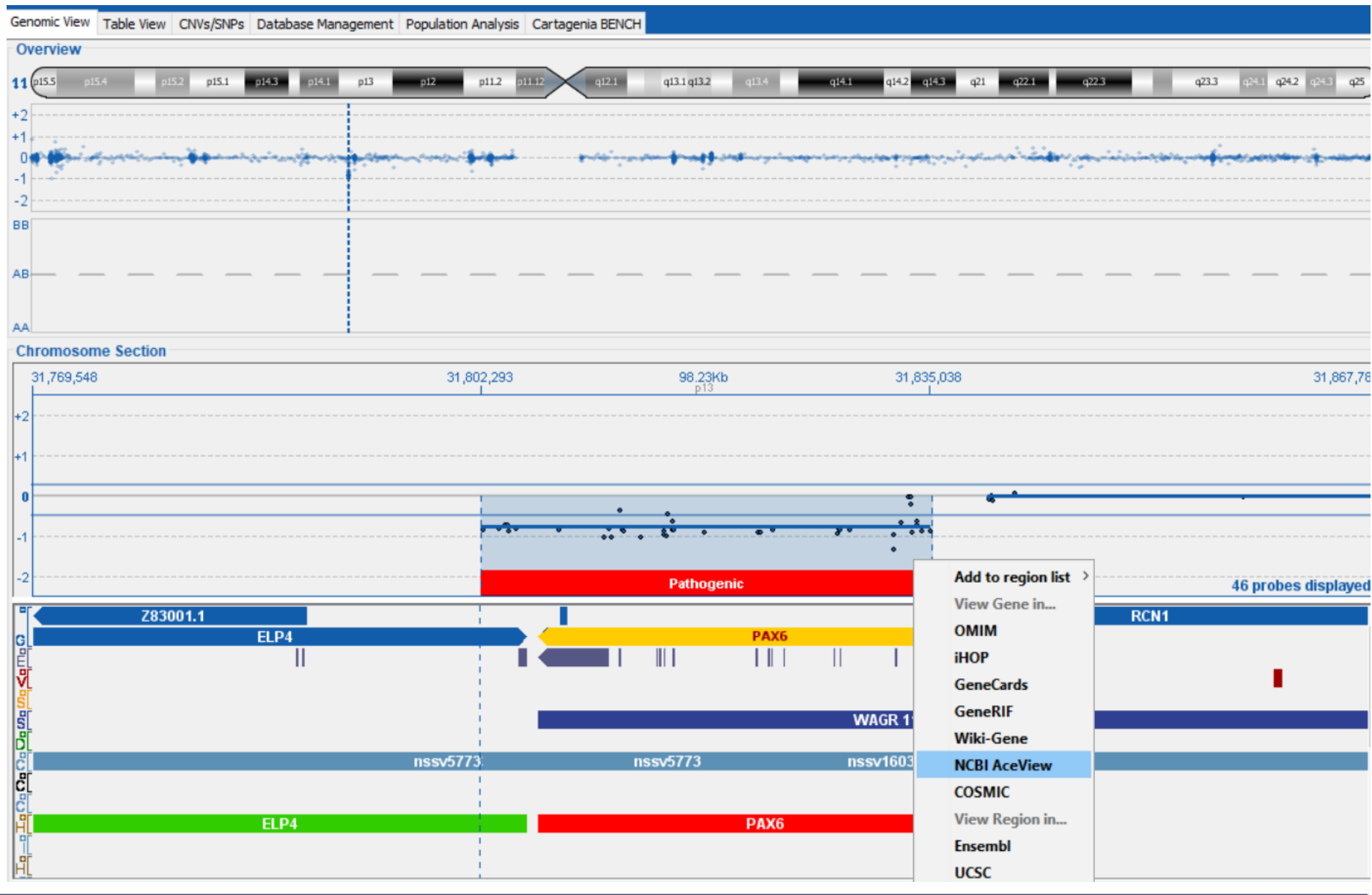


Chromosome Section



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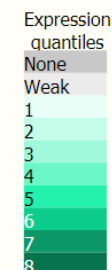
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Gene Summary	Gene on genome	mRNA: .a, .b, .c, .d, .e, .f, .g, .h, .i, .j, .k, .l, .m, .n, .o, .p, .q, .r, .s, .t, .u, .v, .w, .x, .y, .z, .aa, .ab, .ac, .ad, .ae, .af, .ag, .ah, .ai, .aj, .ak, .al, .am, .an, .ao, .ap, .aq, .ar, .as, .at, .au, .av, .aw, .ax, .ay, .az, .ba, .bb, .bc, .bd, .be, .bf, .bg, .bh, .bi, .bj, .bk, .bl, .bm, .bn, .bo, .bp, .bq, .br, .bs, .bt, .bu, .bv, .bw, .bx, .by, .bz, .ca, .cb, .cc, .cd, .ce, .cf, .cg, .ch, .ci, .cj, .ck, .cl, .cm, .cn, .co, .cp, .cq, .cr, .cs, .ct, .cu, .cv, .cw, .cx, .cy, .cz, .da, .db, .dc, .dd, .de, .df, .dg, .dh, .di, .dj, .dk, .dl, .dm, .dn, .do, .dp, .dq, .dr, .ds, .dt, .du, .dv, .dw, .dx, .dy, .dz, .ea, .eb, .ec, .ed, .ee, .ef, .eg, .eh, .ei, .ej, .ek, .el, .em, .en, .eo, .ep, .eq, .er, .es, .et, .eu, .ev, .ew, .ex, .ey, .ez, .fa, .fb, .fc, .fd, .fe, .ff, .fg, .fh, .fi, .fj, .fk, .fl, .fm, .fn, .fo, .fp, .fq, .fr, .fs, .ft, .fu, .fv, .fw, .fx, .fy, .fz, .ga, .gb, .gc, .gd, .ge, .gf, .gg, .gh, .gi, .gj, .gk, .gl, .gm, .gn, .go, .gp, .gq, .gr, .gs, .gt, .gu, .gv, .gw, .gx, .gy, .gz, .ha, .hb, .hc, .hd, .he, .hf, .hg, .hh, .hi, .hj, .hk, .hl, .hm, .hn, .ho, .hp, .hq, .hr, .hs, .ht, .hu, .hv, .hw, .hx, .hy, .hz, .ia, .ib, .ic, .id, .ie, .if, .ig, .ih, .ii, .ij, .ik, .il, .im, .in, .io, .ip, .iq, .ir, .is, .it, .iu, .iv, .iw, .ix, .iy, .iz, .ja, .jb, .jc, .jd, .je, .jf, .jg, .jh, .ji, .jj, .jk, .jl, .jm, .jn, .jo, .jp, .jq, .jr, .js, .jt, .ju, .jv, .jw, .jx, .jy, .jz, .ka, .kb, .kc, .kd, .ke, .kf, .kg, .kh, .ki, .kj, .kl, .km, .kn, .ko, .kp, .kq, .kr, .ks, .kt, .ku, .kv, .kw, .kx, .ky, .kz, .la, .lb, .lc, .ld, .le, .lf, .lg, .lh, .li, .lj, .lk, .ll, .lm, .ln, .lo, .lp, .lq, .lr, .ls, .lt, .lu, .lv, .lw, .lx, .ly, .lz, .ma, .mb, .mc, .md, .me, .mf, .mg, .mh, .mi, .mj, .mk, .ml, .mn, .mo, .mp, .mq, .mr, .ms, .mt, .mu, .mv, .mw, .mx, .my, .mz, .na, .nb, .nc, .nd, .ne, .nf, .ng, .nh, .ni, .nj, .nk, .nl, .nm, .nn, .no, .np, .nq, .nr, .ns, .nt, .nu, .nv, .nw, .nx, .ny, .nz, .oa, .ob, .oc, .od, .oe, .of, .og, .oh, .oi, .oj, .ok, .ol, .om, .on, .oo, .op, .oq, .or, .os, .ot, .ou, .ov, .ow, .ox, .oy, .oz, .pa, .pb, .pc, .pd, .pe, .pf, .pg, .ph, .pi, .pj, .pk, .pl, .pm, .pn, .po, .pp, .pq, .pr, .ps, .pt, .pu, .pv, .pw, .px, .py, .pz, .qa, .qb, .qc, .qd, .qe, .qf, .qg, .qh, .qi, .qj, .qk, .ql, .qm, .qn, .qo, .qp, .qq, .qr, .qs, .qt, .qu, .qv, .qw, .qx, .qy, .qz, .ra, .rb, .rc, .rd, .re, .rf, .rg, .rh, .ri, .rj, .rk, .rl, .rm, .rn, .ro, .rp, .rq, .rr, .rs, .rt, .ru, .rv, .rw, .rx, .ry, .rz, .sa, .sb, .sc, .sd, .se, .sf, .sg, .sh, .si, .sj, .sk, .sl, .sm, .sn, .so, .sp, .sq, .sr, .ss, .st, .su, .sv, .sw, .sx, .sy, .sz, .ta, .tb, .tc, .td, .te, .tf, .tg, .th, .ti, .tj, .tk, .tl, .tm, .tn, .to, .tp, .tq, .tr, .ts, .tt, .tu, .tv, .tw, .tx, .ty, .tz, .ua, .ub, .uc, .ud, .ue, .uf, .ug, .uh, .ui, .uj, .uk, .ul, .um, .un, .uo, .up, .uq, .ur, .us, .ut, .uu, .uv, .uw, .ux, .uy, .uz, .va, .vb, .vc, .vd, .ve, .vf, .vg, .vh, .vi, .vj, .vk, .vl, .vm, .vn, .vo, .vp, .vq, .vr, .vs, .vt, .vu, .vv, .vw, .vx, .vy, .vz, .wa, .wb, .wc, .wd, .we, .wf, .wg, .wh, .wi, .wj, .wk, .wl, .wm, .wn, .wo, .wp, .wq, .wr, .ws, .wt, .wu, .wv, .ww, .wx, .wy, .wz, .xa, .xb, .xc, .xd, .xe, .xf, .xg, .xh, .xi, .xj, .xk, .xl, .xm, .xn, .xo, .xp, .xq, .xr, .xs, .xt, .xu, .xv, .xw, .xx, .xy, .xz, .ya, .yb, .yc, .yd, .ye, .yf, .yg, .yh, .yi, .yj, .yk, .yl, .ym, .yn, .yo, .yp, .yq, .yr, .ys, .yt, .yu, .yv, .yw, .yx, .yy, .yz, .za, .zb, .zc, .zd, .ze, .zf, .zg, .zh, .zi, .zj, .zk, .zl, .zm, .zn, .zo, .zp, .zq, .zr, .zs, .zt, .zu, .zv, .zw, .zx, .zy, .zz	Alternative mRNAs features, proteins, introns, exons, sequences	Expression Tissue	Function, regulation, related genes DCI
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PAX6 Gene expression in 15 primates, 16 tissues, from the NHPKTR project in sFPKM

	HUM	CHP	PTM	JMI	RMI	RMC	CMM	CMC	BAB	SMY	MST	SQM	OWL	MLM	RTL
Cerebellum		5.40	43.2	11.6	32.8		43.2	43.2	40.3	99.3		28.5		53.2	
Brain	18.8	2.05	4.39	7.64	4.71		4.10	5.40	3.33	5.79	3.82	4.10		6.65	
Pituitary		2.05	4.10	2.90	3.33		6.21	5.79	4.71	6.21	6.21				
Ovary	2.70														
Testis	2.90				0.72										
Kidney	2.70		0.06		0.07			0.05							
Liver	0.96									0.04				0.05	
Heart	1.45		0.10	0.05	0.05						0.68	0.06			
SkeletalMuscle	0.83									0.05	0.04				
Lung	0.78				0.07				0.06	0.04	0.06			0.08	
Colon	1.91	0.07	0.27	0.11			0.18	0.32	0.36	0.34	0.10	0.32		0.10	
BoneMarrow		0.06	0.09					0.07	0.09	0.04	0.07				
Spleen			0.07	0.06											
LymphNode	0.96	0.06	0.13	0.06							0.10				
Thymus		0.18	0.13	0.08	0.10		0.06	0.07	0.06	0.18					
WholeBlood	1.55														



RNA-seq gene expression profile across 16 selected tissues from the Non-Human Primates Reference Transcriptome Resource (link to [NHPKTR project](#)).

- Primates: **Apes** (HUM: Human (Illumina BodyMap 2), CHP: Chimpanzee), **Old World monkeys** (PTM: Pig-Tailed Macaque, JMI Japanese Macaque, RMI Rhesus Macaque Indian, RMC Rhesus Macaque Chinese, CMM Cynomolgus Macaque Mauritian, CMC Cynomolgus Macaque Chinese, BAB Olive Baboon, SMY Sooty Mangabey); **New World monkeys** (MST common Marmoset, SQM Squirrel Monkey, OWL Owl Monkey); and **Lemurs** (MLM Mouse Lemur, RTL Ring-Tailed Lemur).

- The level for significantly expressed genes is color coded in 8 equal sized bins (light to dark green). Light gray is for weak not-accurately measured expression (2 to 8 reads above intergenic background); dark gray for no expression or no sequence conservation (0 read in gene). The plot to the right shows the distribution of measured expression values in all tissues for all genes (blue) and for this gene (green), in Magic index = $\log_2(1000 \text{ sFPKM})$.

You may also examine the strand-specific [genome coverage plots on the experimental AceView/Magic hub at UCSC](#), by tissue or by species. Tracks may be **slow to load**; please reload if some tracks come up yellow-greenish, and thanks to UCSC for the great work!

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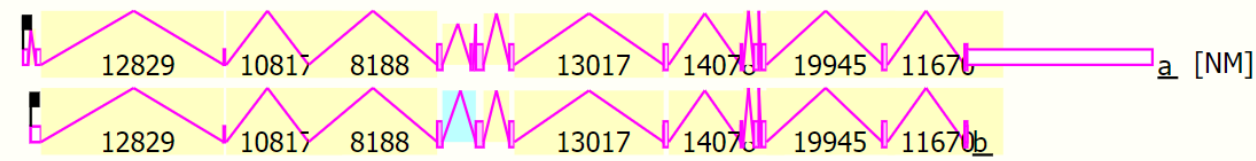
▼ **Complete gene on genome diagram:** ↑

Please choose between the [zoomable GIF version](#)., and the [HTML5/SVG version](#).

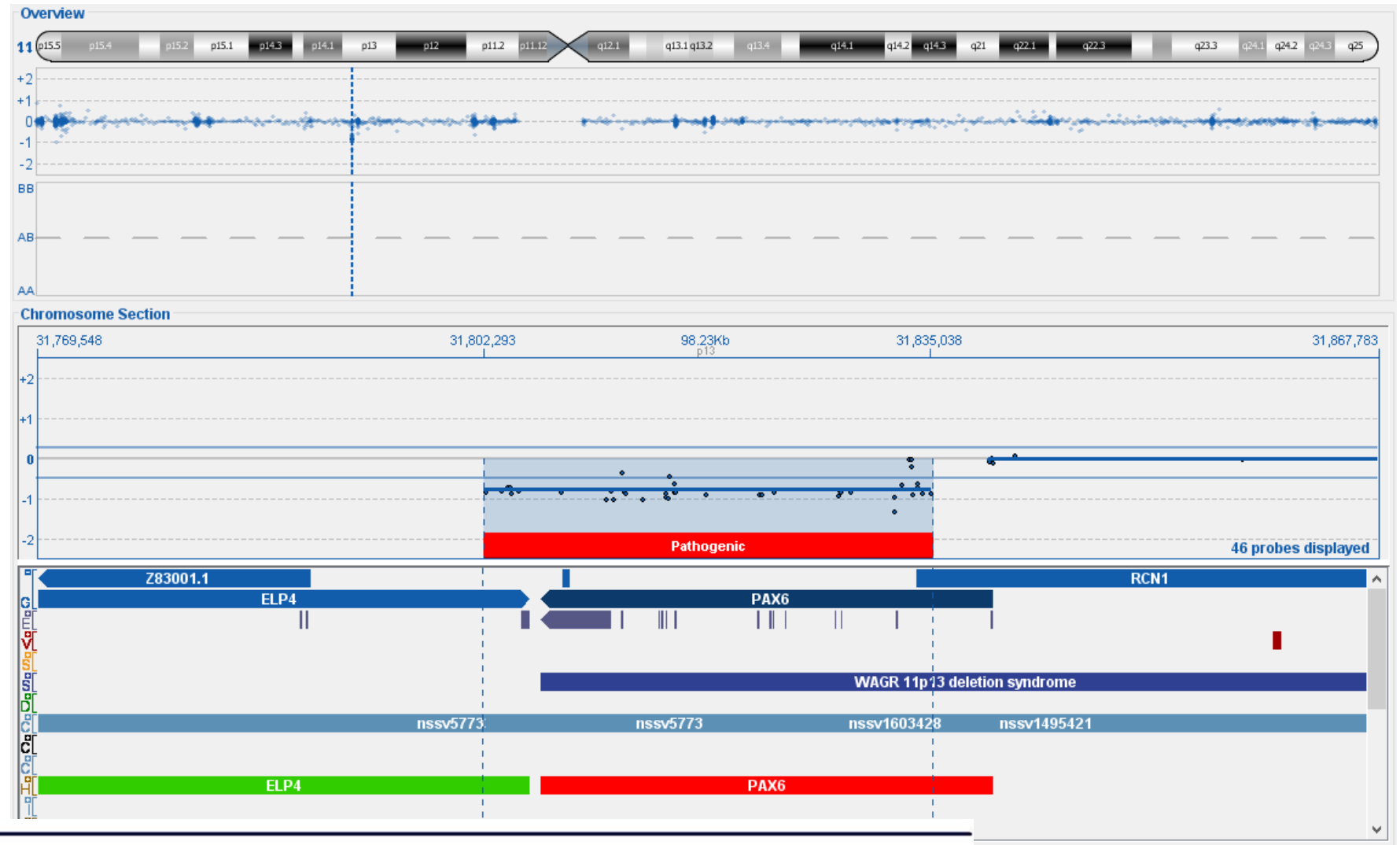
This diagram shows in true scale the gene on the genome, the mRNAs and the cDNA clones.

▼ **Compact gene diagram** ↑

Gene PAX6 5' → 3' encoded on minus strand of chromosome 11 from 31,839,495 to 31,804,903



Roczny chłopiec. Wskazanie: aniridia obustronna (zaburzenie rozwojowe polegające na braku tęczówki oka)
arr[hg19] 11p13(31,802,293-31,835,038)x1 o wielkości ~91 kb





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PAIRED BOX GENE 6; PAX6

HGNC Approved Gene Symbol: **PAX6***Cytogenetic location:* **11p13** *Genomic coordinates (GRCh38):* **11:31,789,025-31,817,960** (from NCBI)

Gene-Phenotype Relationships

Location	Phenotype Clinical Synopses	Phenotype MIM number	Inheritance	Phenotype mapping key
11p13	?Coloboma of optic nerve	120430	AD	3
	?Coloboma, ocular	120200	AD	3
	?Morning glory disc anomaly	120430	AD	3
	Aniridia	106210	AD	3
	Anterior segment dysgenesis 5, multiple subtypes	604229	AD	3
	Cataract with late-onset corneal dystrophy	106210	AD	3
	Foveal hypoplasia 1	136520	AD	3
	Keratitis	148190	AD	3
	Optic nerve hypoplasia	165550	AD	3

External Links

[▶ Genome](#)[▶ DNA](#)[▶ Protein](#)[▶ Gene Info](#)[▶ Clinical Resources](#)[▼ Variation](#)[1000 Genome](#)
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SIDEBAR

Clinical significance

Conflicting interpretations (30)

Benign (63)

Likely benign (51)

Uncertain significance (110)

Likely pathogenic (48)

Pathogenic (289)

Risk factor (0)

Molecular consequence

Frameshift (106)

Missense (101)

Nonsense (60)

Splice site (48)

ncRNA (357)

Near gene (0)

UTR (296)

Variation type

Deletion (146)

Duplication (55)

Indel (10)

Insertion (54)

Single nucleotide (352)

Variant length

Less than 51 bp (507)

Between 51 and 1000 bp (2)

<https://www.ncbi.nlm.nih.gov/gene/120534>

Tabular ▾ 100 per page ▾ Sort by Location ▾

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 Showing for results for variants in the **PAX6** gene. [Search instead for all ClinVar records that mention PAX6](#)

Search results

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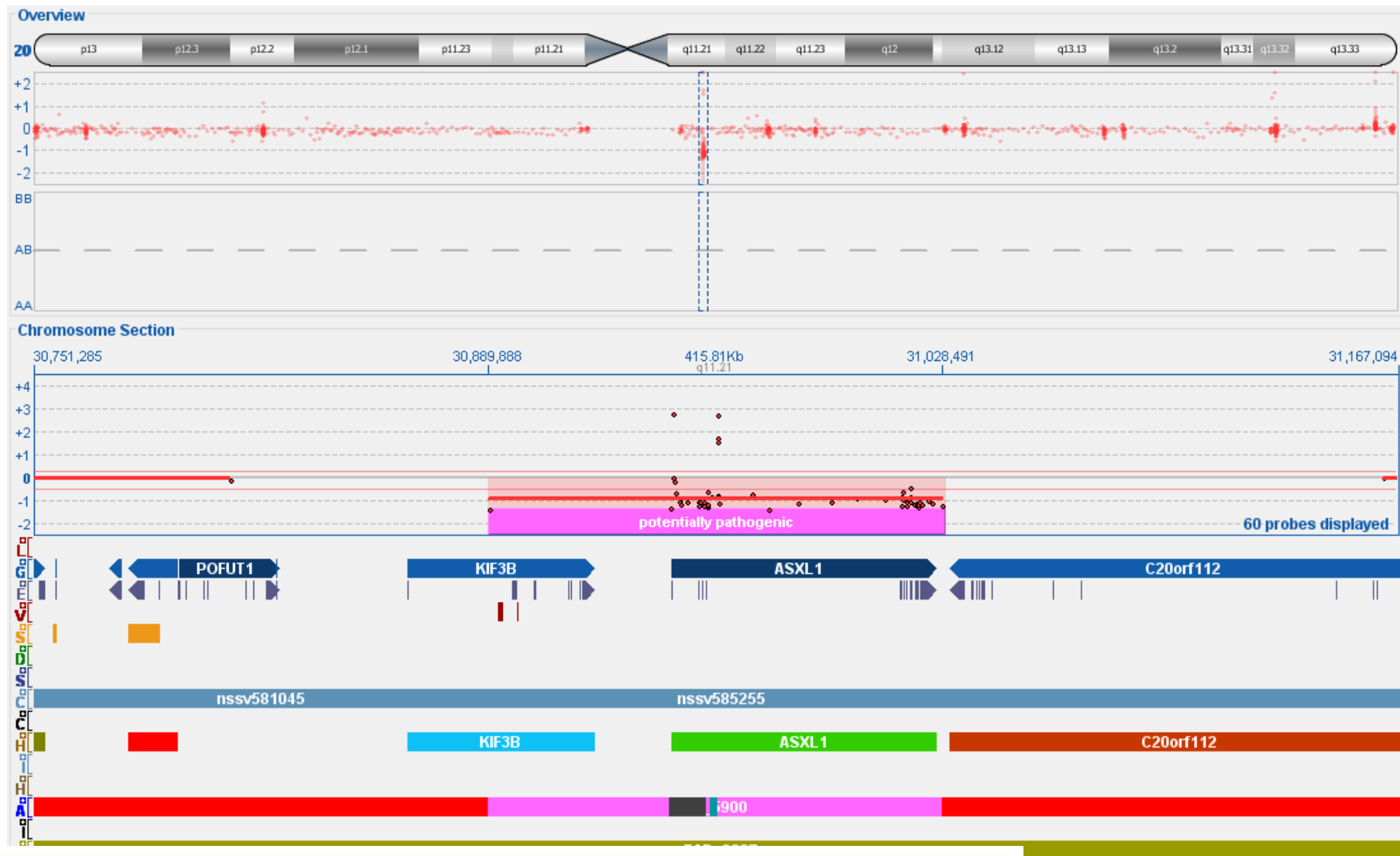
	Variation Location	Gene(s)	Protein change	Condition(s)	Clinical significance (Last reviewed)	Review status	Accession
☐ 1.	GRCh38/hg38 11p15.1-13(chr11:20079474-34463996)x1 GRCh37: Chr11:20101020-34485543 GRCh38: Chr11:20079474-34463996	ABTB2 , ANO3 , ANO3-AS1 , ANO5 , ARL14EP , ARL14EP-DT , BBOX1 , BBOX1-AS1 , BDNF , BDNF-AS , C11orf91 , CAPRIN1 , CAT , CCDC179 , CCDC34 , CCDC73 , CD59 , CSTF3 , CSTF3-DT , DBX1 , DNDC1 , DNDC7 , DNAJC24 , EIF3M , ELP4 , FANCE , FRXO3 ...more		See cases	Pathogenic (Aug 30, 2010)	no assertion criteria provided	VCV000154432
☐ 2.	GRCh38/hg38 11p14.3-12(chr11:22550115-38199159)x1 GRCh37: Chr11:22571661-38220709 GRCh38: Chr11:22550115-38199159	BDNF , MPPED2 , CAT , CD44 , CD59 , CSTF3 , ELF5 , FANCE , FSHB , GAS2 , KCNA4 , LMO2 , CAPRIN1 , PAX6 , RAG1 , RAG2 , RCN1 , SLC1A2 , TRAF6 , WT1 , PDHX , BBOX1 , HIPK3 , EIF3M , FJX1 , KIAA1549L , ARTR2 , PAMR1 , FRXO3 , EHF , ELP4 , COMMD9 , APIP ...more		See cases	Pathogenic (Aug 12, 2011)	criteria provided, single submitter	VCV000058858
☐ 3.	GRCh38/hg38 11p14.2-13(chr11:26368962-35252976)x1 GRCh37: Chr11:26390509-35274523 GRCh38: Chr11:26368962-35252976	BDNF , MPPED2 , CAT , CD44 , CD59 , CSTF3 , ELF5 , FSHB , KCNA4 , LMO2 , CAPRIN1 , PAX6 , RCN1 , SLC1A2 , WT1 , PDHX , BBOX1 , HIPK3 , EIF3M , KIAA1549L , ABTB2 , FBXO3 , EHF , ELP4 , APIP , WT1-AS , NAT10 , LIN7C , TCP11L1 , IGR4 , ANO3 , PRRG4 , OSER1 ...more		See cases	Pathogenic (Nov 30, 2010)	no assertion criteria provided	VCV000145969

Variation Location		Gene(s)	Protein change	Condition(s)	Clinical significance (Last reviewed)	Review status	Accession
☐	1. GRCh38/hg38 11p15.1-13(chr11:20079474-34463996)x1 <i>GRCh37:</i> Chr11:20101020-34485543 <i>GRCh38:</i> Chr11:20079474-34463996	ABTB2 , ANO3 , ANO3-AS1 , ANO5 , ARL14EP , ARL14EP-DT , BBOX1 , BBOX1-AS1 , BDNF , BDNF-AS , C11orf91 , CAPRIN1 , CAT , CCDC179 , CCDC34 , CCDC73 , CD59 , CSTF3 , CSTF3-DT , DBX1 , DCDC1 , DNFPC7 , DNAJC24 , EIF3M , ELP4 , FANCE , FRXO3 , FRXO3-DT ...more		See cases	Pathogenic (Aug 30, 2010)	no assertion criteria provided	VCV000154432
☐	2. GRCh38/hg38 11p14.3-12(chr11:22550115-38199159)x1 <i>GRCh37:</i> Chr11:22571661-38220709 <i>GRCh38:</i> Chr11:22550115-38199159	BDNF , MPPED2 , CAT , CD44 , CD59 , CSTF3 , ELF5 , FANCE , FSHB , GAS2 , KCNA4 , LMO2 , CAPRIN1 , PAX6 , RAG1 , RAG2 , RCN1 , SLC1A2 , TRAF6 , WT1 , PDHX , BBOX1 , HIPK3 , EIF3M , FJX1 , KIAA1549L , ARTR2 , PAMR1 , FRXO3 , EHF , ELP4 , COMMD9 , APIP ...more		See cases	Pathogenic (Aug 12, 2011)	criteria provided, single submitter	VCV000058858
☐	3. GRCh38/hg38 11p14.2-13(chr11:26368962-35252976)x1 <i>GRCh37:</i> Chr11:26390509-35274523 <i>GRCh38:</i> Chr11:26368962-35252976	BDNF , MPPED2 , CAT , CD44 , CD59 , CSTF3 , ELF5 , FSHB , KCNA4 , LMO2 , CAPRIN1 , PAX6 , RCN1 , SLC1A2 , WT1 , PDHX , BBOX1 , HIPK3 , EIF3M , KIAA1549L , ABTB2 , FBXO3 , EHF , ELP4 , APIP , WT1 , AS , NAT10 , LIN7C , TCP11L1 , UGR4 , ANO3 , PRRG4 , OSER1 ...more		See cases	Pathogenic (Nov 30, 2010)	no assertion criteria provided	VCV000145969
☐	4. GRCh38/hg38 11p13(chr11:31299323-31790071)x1 <i>GRCh37:</i> Chr11:31320870-31811619 <i>GRCh38:</i> Chr11:31299323-31790071	DCDC1 , DNAJC24 , ELP4 , IMMP1L , LOC105980003 , LOC105980005 , LOC105980073 , PAX6 , PAX6DRR , PAX6_HS8		See cases	Pathogenic (Jan 27, 2011)	no assertion criteria provided	VCV000146313
☐	5. GRCh38/hg38 11p13(chr11:31528093-31807593)x1 <i>GRCh37:</i> Chr11:31549640-31829141 <i>GRCh38:</i> Chr11:31528093-31807593	PAX6 , ELP4 , PAX6DRR , LOC105980003 , LOC105980005 , LOC105980073 , LOC106007485 , LOC106007493		See cases	Pathogenic (Aug 12, 2011)	criteria provided, single submitter	VCV000058886
☐	6. NC_000011.10:g.(?_31664397)_(-31794829_?)del <i>GRCh37:</i> Chr11:31685945-31816377 <i>GRCh38:</i> Chr11:31664397-31794829	ELP4 , LOC105980003 , LOC105980073 , PAX6 , PAX6DRR		Aniridia 1, Irido-corneo-trabecular dysgenesis	Pathogenic (Jan 8, 2019)	criteria provided, single submitter	VCV000584225
☐	7. NC_000011.8:g.31698271_31794414del96144 <i>GRCh37:</i> Chr11:31741695-31837838 <i>GRCh38:</i> Chr11:31720147-31816290	LOC105980003 , ELP4 , LOC106007485 , LOC106014249 , PAX6 , LOC106007493		Congenital aniridia	Pathogenic	no assertion criteria provided	VCV000267194

	Variation Location	Gene(s)	Protein change	Condition(s)	Clinical significance (Last reviewed)	Review status	Accession
☐ 27.	NM_000280.4(PAX6):c.1169del (p.Gly390fs) GRCh37: Chr11:31812272 GRCh38: Chr11:31790724	PAX6	G471fs, G189fs, G254fs, G323fs, G337fs, G390fs, G404fs, G415fs, G429fs	Aniridia 1	Pathogenic (Aug 15, 2019)	criteria provided, single submitter	VCV000800476
☐ 28.	NM_000280.4(PAX6):c.1160_1163del (p.Gly387fs) GRCh37: Chr11:31812278-31812281 GRCh38: Chr11:31790730-31790733	PAX6	G412fs, G334fs, G387fs, G186fs, G401fs, G251fs, G320fs, G426fs, G468fs	Aniridia 1	Pathogenic (Aug 15, 2019)	no assertion criteria provided	VCV000800475
☐ 29.	NM_000280.4(PAX6):c.1077del (p.Thr360fs) GRCh37: Chr11:31812364 GRCh38: Chr11:31790816	PAX6	T441fs, T159fs, T224fs, T374fs, T385fs, T293fs, T307fs, T360fs, T399fs	Congenital cataract, Aniridia 1	Pathogenic (Aug 15, 2019)	criteria provided, single submitter	VCV000217328
☐ 30.	NM_000280.4(PAX6):c.1061_1070del (p.Tyr354fs) GRCh37: Chr11:31812371-31812380 GRCh38: Chr11:31790823-31790832	PAX6	Y218fs, Y287fs, Y354fs, Y368fs, Y301fs, Y379fs,	Aniridia 1	Pathogenic (Aug 15, 2019)	no assertion criteria provided	VCV000800473

Wskazanie: agenezja ciała modelowatego u płodu

Wynik badania: arr[hg19] 20q11.21(30,889,888-31,028,491)x1 352.06Kb



***612990**

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Gene-Phenotype
Relationships

Text

Description

Cloning and
Expression

Gene Structure

Mapping

Gene Function

Molecular Genetics

Animal Model

Allelic Variants

Table View

References

Contributors

Creation Date

Edit History

*** 612990****ASXL TRANSCRIPTIONAL REGULATOR 1; ASXL1***Alternative titles; symbols*ADDITIONAL SEX COMBS-LIKE 1
KIAA0978*HGNC Approved Gene Symbol:* **ASXL1***Cytogenetic location:* **20q11.21** *Genomic coordinates (GRCh38):* **20:32,358,061-32,439,318** (from NCBI)**Gene-Phenotype Relationships**[View clinical synopses as a table](#)

Location	Phenotype	Phenotype MIM number	Inheritance	Phenotype mapping key
20q11.21	Bohring-Opitz syndrome	605039	AD	3
	Myelodysplastic syndrome, somatic	614286		3

PheneGene Graphics ▾

**TEXT**▼ **Description****ASXL1** is a human homolog of the *Drosophila asx* gene. *Drosophila asx* is an enhancer of trithorax

#605039

Table of Contents

[MIM Entry](#)

SKIN, NAILS, & HAIR

Skin

- Sacral dimple
- Nevi flammei (philtrum, nape of neck, forehead)

Hair

- Long hair
- Thick hair
- Hirsutism
- Low frontal hairline

NEUROLOGIC

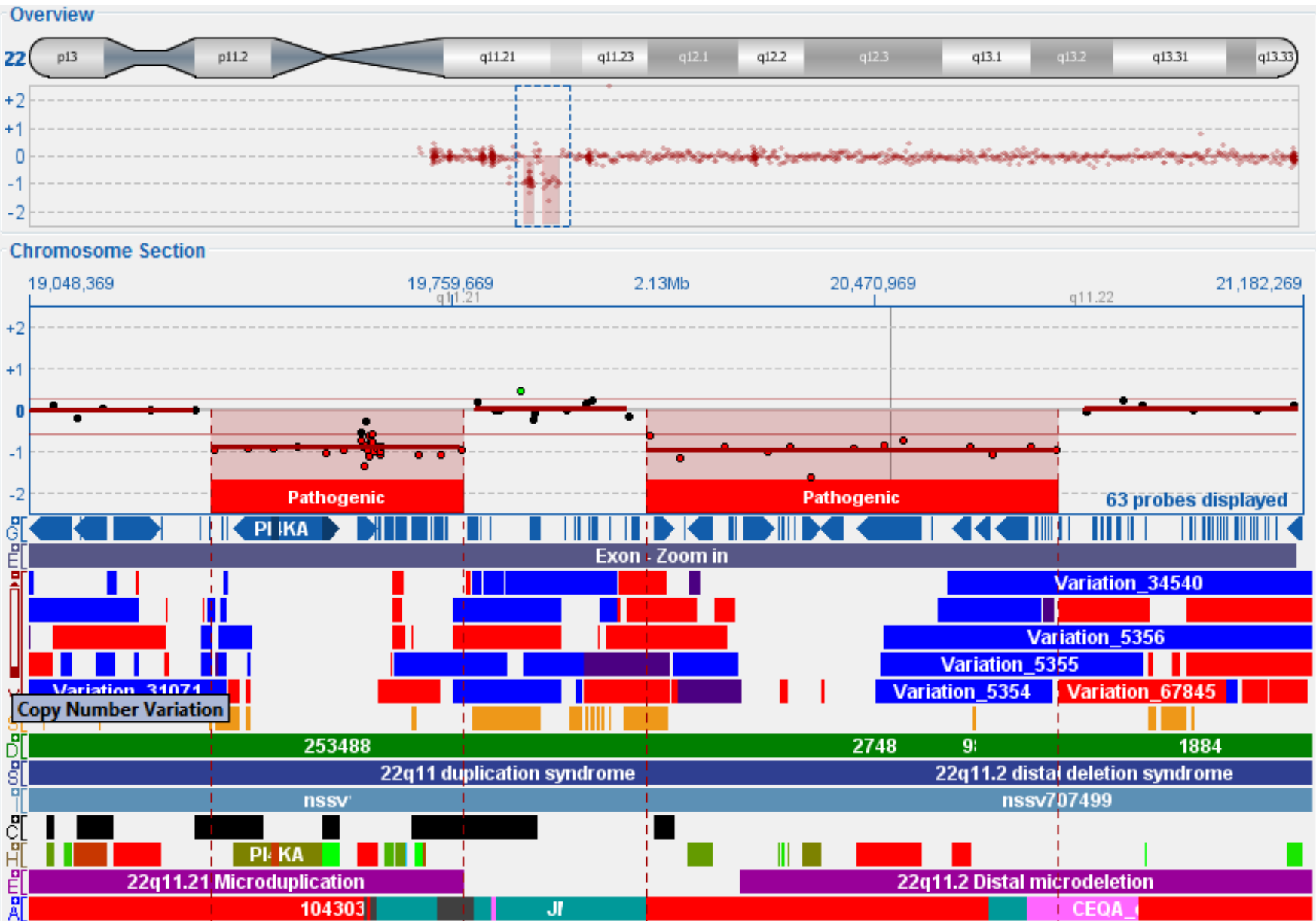
Central Nervous System

- Developmental delay
- Mental retardation, profound
- Seizures
- Hypotonia
- Agenesis of the corpus callosum
- Hypoplastic corpus callosum
- Focal nodular heterotopia
- Small brainstem
- Dandy-Walker malformation

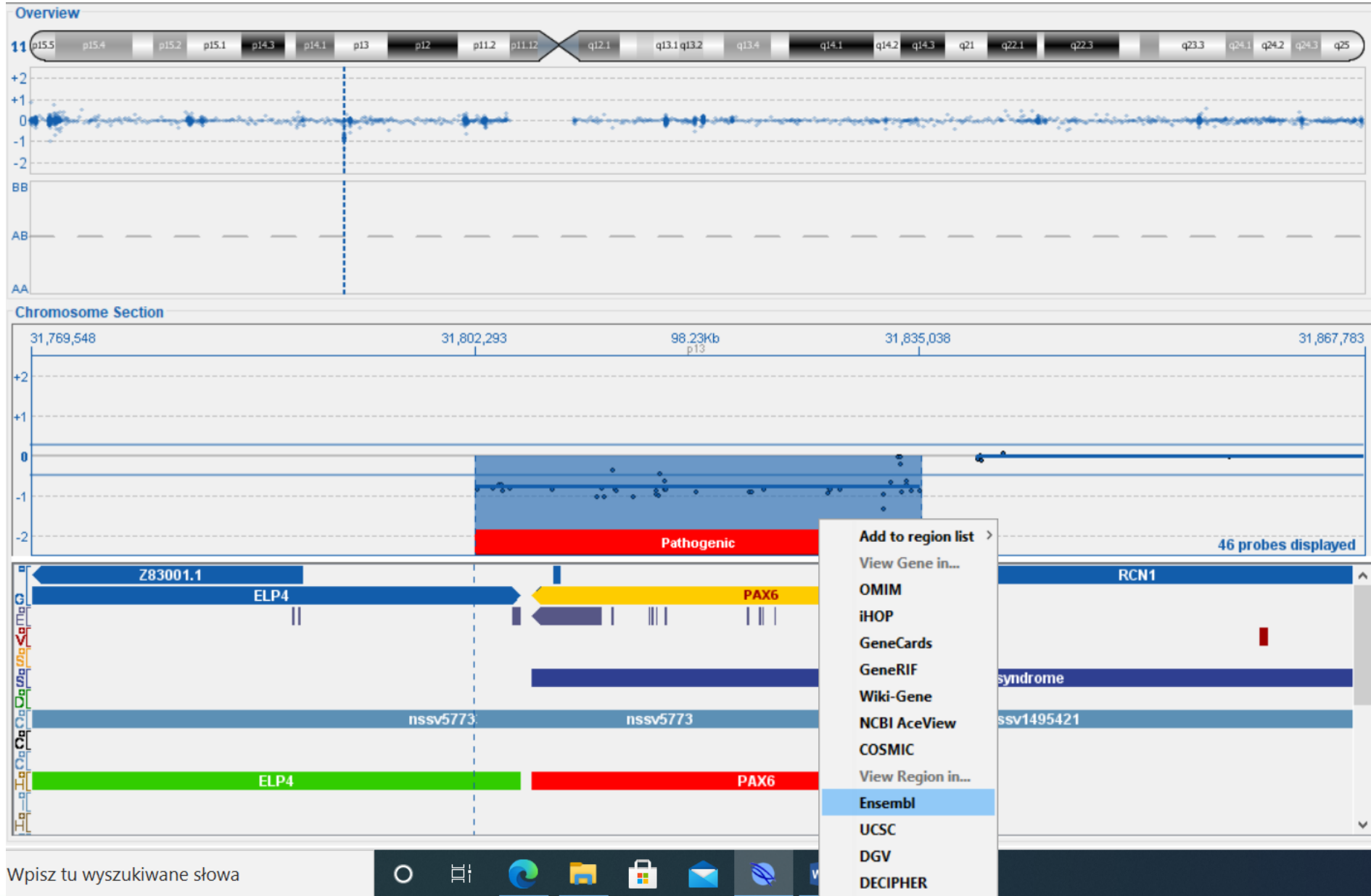
Peripheral Nervous System

- Delayed myelination





Informacje o regionie



- Whole genome
- Chromosome summary
- Region overview
- Region in detail**
- [-] Comparative Genomics
 - Synten
 - Alignments (image)
 - Alignments (text)
 - Region Comparison
- [-] Genetic Variation
 - Variant table
 - Resequencing
 - Linkage Data
- Markers
- [-] Other genome browsers
 - UCSC [↗](#)
 - NCBI [↗](#)
 - Ensembl GRCh37 [↗](#)

[Bookmark this page](#)

Assembly exceptions
Chr. 11

Assembly exceptions

The screenshot displays the Ensembl genome browser interface for a specific genomic region on chromosome 13p13. The top track shows the chromosome bands and contigs, with a scale from 31.40 Mb to 32.20 Mb. Below this, the genes track lists several genes, including *AC131571.4*, *AC131571.1*, *PAX6*, *PAUPAR*, *AL035078.4*, *AL035078.1*, *RCN1*, *EIF4A2P5*, *AL035078.2*, *AL078612.1*, *AL078612.2*, *THEM7P*, and *U3*. The regulatory build track shows various regulatory elements, including enhancers, promoters, and transcription factor binding sites. A red dashed box highlights a specific region around 31.80 Mb, which contains the *PAX6* gene and its associated regulatory elements. The gene legend indicates that red bars represent protein-coding genes, grey bars represent pseudogenes, and yellow bars represent merged Ensembl/Havana genes. The regulation legend shows various regulatory elements such as CTCF, Open Chromatin, Promoter Flank, Enhancer, Promoter, and Transcription Factor Binding Site.

Go

The screenshot displays the UCSC Genome Browser interface for chromosome 1. The top navigation bar includes icons for zooming, panning, and other browser functions. The main track shows the chromosome bands, with a scale bar indicating 37.52 kb. Below the chromosome bands, the 90 way GERP elements track is visible, showing regions of high conservation. The Human cDNAs (RefSeq/ENAs) track shows the location of the p13 gene. The EPO-Extended track shows the location of the EPO gene. The interface includes a 'Drag/Select' tool in the top right corner.

Ensembl - sekwencja genu

Ensembl
Home: Human
Location: 22:19,191,886-19,271,918 [Gene: MED15]

Gene: MED15

- Gene summary
- Splice variants (4)
- Supporting evidence
- Sequence**
- External references (5)
- Regulation
- Comparative Genomics
 - Genomic alignments (37)
- Gene Tree
 - Gene Tree (text)
 - Gene Tree (alignment)
- Orthologues (42)
- Paralogues (0)
- Protein families (1)
- Genetic Variation
 - Variation Table
 - Variation Image
- External Data
- ID History
 - Gene history
 - User data
- Personal annotation

Gene: MED15 (ENSG00000099917)

Mediator of RNA polymerase II transcription subunit 15 (Mediator complex subunit 15)(Positive cofactor 2 glutamine/Q-rich-associated protein)(PC2 glutamine/Q-rich-associated protein)(TPA-inducible gene 1 protein)(TIG-1)(Activator-recruited cofactor 105 kDa component)(ARC105)(CTG repeat protein 7a) (Trinucleotide repeat-containing gene 7 protein) [Source: UniProtKB/Swiss-Prot Q96RNS](#)

Location [Chromosome 22: 19,191,886-19,271,918](#) forward strand.

Transcripts There are 4 transcripts in this gene: [hide transcripts](#)

Name	Transcript ID	Protein ID	Description
MED15-001	ENST00000292733	ENSP00000292733	protein_coding
MED15-004	ENST00000263205	ENSP00000263205	protein_coding
MED15-005	ENST00000406999	ENSP00000384344	protein_coding
MED15-006	ENST00000382974	ENSP00000372434	protein_coding

Transcript and Gene level displays

In Ensembl a gene is made up of one or more transcripts. We provide displays at two levels:

- Transcript views which provide information specific to an individual transcript such as the cDNA and CDS sequences and protein domain annotation.
- Gene views which provide displays for data associated at the gene level such as orthologues and paralogues, regulatory regions and splice variants.

This view is a gene level view. To access the transcript level displays select a Transcript ID in the table above and then navigate to the information you want using the menu at the left hand side of the page. To return to viewing gene level information click on the Gene tab in the menu bar at the top of the page.

« Supporting evidence »

Marked-up sequence [help](#)

External references »

Sequence markup

Ensembl has a number of sequence mark up pages on the site, you can look at the exon intron structure of individual transcripts by selecting on the transcript name in the table above and then selecting Exons in the left hand side - alternatively you can see the sequence of the transcript along with its protein translation and variation features by selecting the transcript then selecting Sequence > cDNA.

This view and the transcript based sequence views are configurable by clicking on the "Configure this page" link in the left hand menu

THIS STYLE: Location of ENSG00000099917 exons

THIS STYLE: Location of Archive ensembl exons

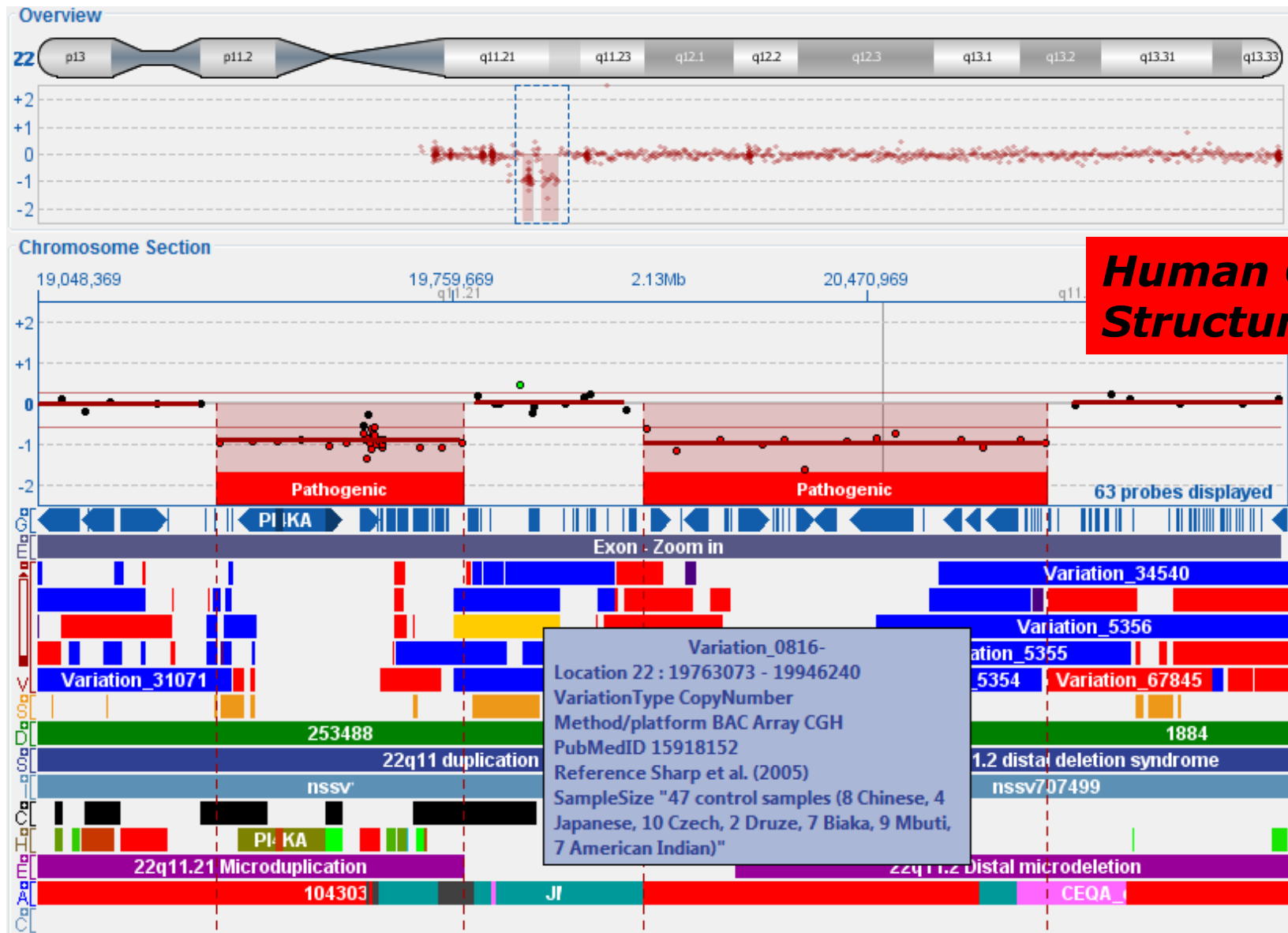
```
>chromosome:NCBI36:22:19191886:19272518:1
AGCTAGGCTGAGTTCTCCATGAAGGGGACGTGGCTGCTGGTCAAAAGGGAAAAGCCCATGT
CTAAAAATTATTAACGTGGTTTAGGGGCCCTCACATTCOCCACCCCCCAATACAGCCATT
GTGAGATGTGAGATTCAA AAAATCGAAGAAGTGAAAGCGGTGATGAGAGTCCATCTGGTCGC
TCTTCGGATCGGCGCTAGCAGGCAAGTTGTCATAAAGCAGATCCCAGATCACGTTGCACT
GGCACAAGTAGGTACCCACACATATTTGATAAATAAACACTCTCTCCCTAGCATTACTA
TAGATAGCTGGCAGCTTG6CCTGGCATTCCCGGAGGGGTCTGGATCTCAGGGAATAGATAA
GGCAGGACACTGAAGAGTTGCAAAAAAGCAGGCGGTGAGGCGCAGGCTCTGCTGCGGGGA
GCACCTGCCGTGTCCGACAGCTGCACTGGAAAGAGGGGCGTGTGTCTCCACGACGGGCGGA
ACCGAGAGCCGCTGTGTCGCCGCGCGGGGAACTTCATTCCCAAGAGCTGTGCGCGAGACT
CCAATTCOCAAGGCCCTCTCTCACTTCGCGGCTCGGCGAGGCACTGCGGAGCGCTTCG
GGTTTGCGGCTGTGCTCTGTGACTGAGCGCGCGCGCGGTGTGCGCGCAAGCGGATGCGCGG
CGCGGAGCTGCGGAAACAGGCAATGAGAGTTTCCCGCGCAAGACCGACTGCGCGAGCACCG
CCTTCGCGCAAGAGCTGTGCTGACTCAAAATGTGAGTAGTGGTGGGGCAGGGGGGCTGGATTG
TGGGACTTCTCTCTTAGCGTGGCGGGGCGAGGCGAGGGCGGAGACCCGTGAGAAAGCTACG
GCGCGGGAGACAGAAAGGCGCGGGGAACTTGCTGGGTCCGAGGCTCGGGGCCCCCGGT
CTGTCCCTCTCGGTCGCGACATGGACTGCTGCTGTTGCTTCTCGGGGCGAGGCTCTGCA
ACCAAGAGGCGCTGGCTATGAATCATGTCTTGAGGCTTCTCATCTGCTCATTTGTGTGC
TTTGGGTGCAAGCTTTCCCGCGCTTTTGAAGCACATGAATAGGAAAGGAGAGAGAG
ACCGGGGTGATGAGGTTTATGACGGGCTGGGGGCTGAGGTTTCTCTTCTGAGAAAGG
```

Configure this page

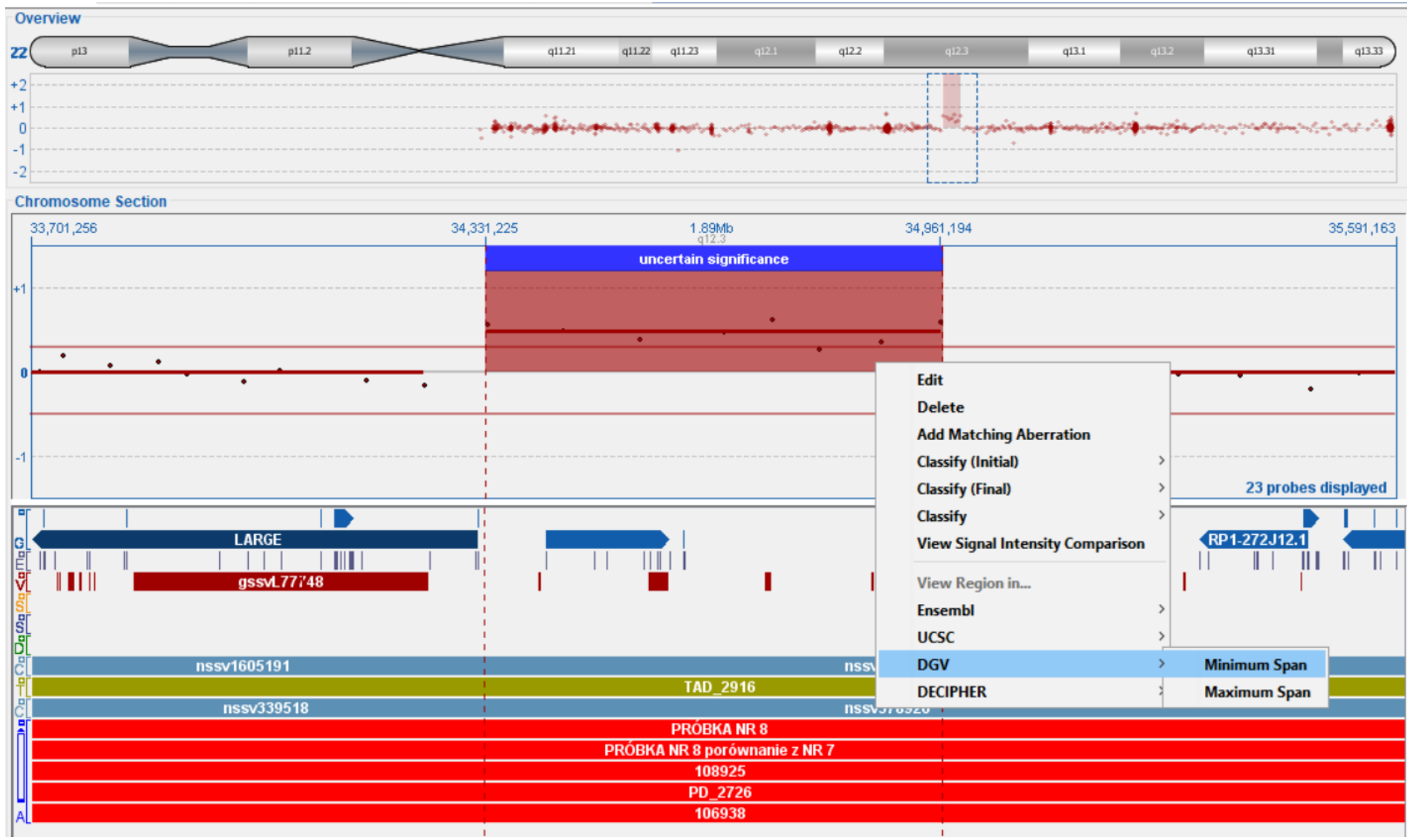
Add custom data to page

Export data

Bookmark this page



Human Genome Structural Variation



Database of Genomic Variants

A curated catalogue of human genomic structural variation

File Pomoc

Genomic Variants in Human Genome (Build GRCh37: Feb. 2009, hg19): Widoczne 630 kbp z sekwencji chr22, fragment od 34,331,225 do 34,961,194

Browser [Select Tracks](#) [Custom Tracks](#) [Preferences](#)

I Szukaj

Nazwa lub fragment:

chr22:34,331,225..34,961,194 Szukaj

Przykłady: chr7:71890181..72690180, CFTR, AC108171.3, ns529033.

Źródło danych

Genomic Variants in Human Genome (Build GRCh37: Feb. 2009, hg19) ▼

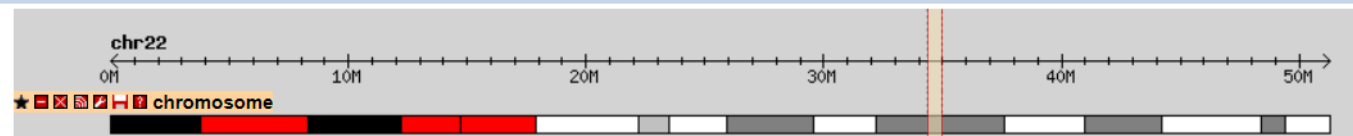
Przewijanie/powiększenie: << < — Widoczno: 630 kbp + > >> ☐ Skieruj oś przeciwnie

Filter variants

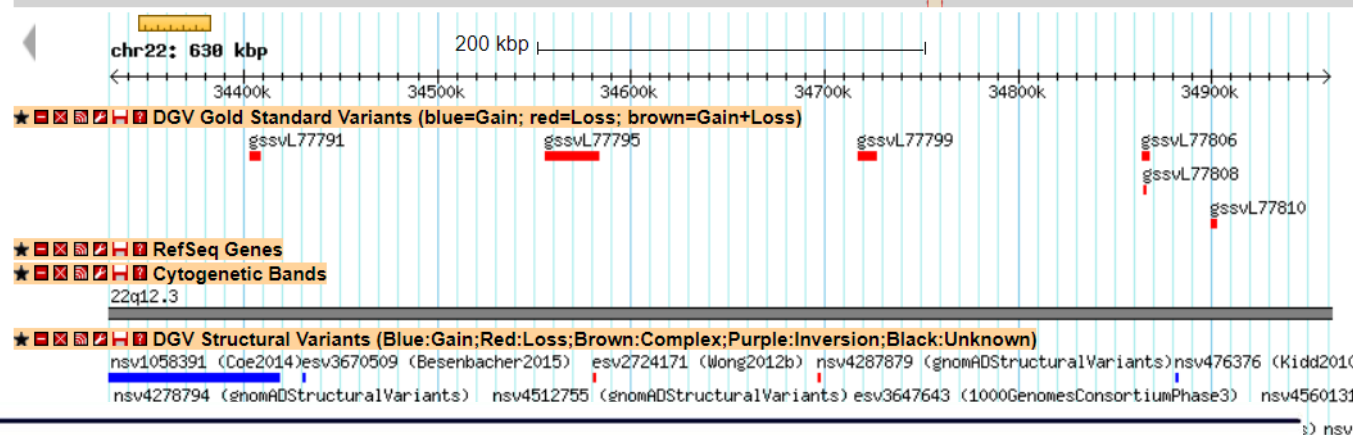
study ▼ = ▼ + -

Filter Reset

I Przegląd



I Szczegóły

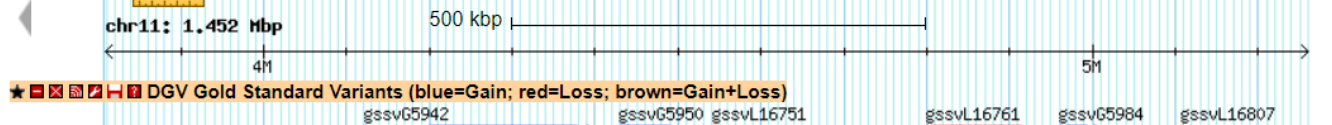
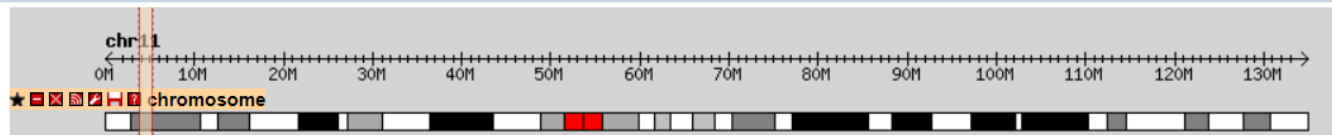


Filter variants

study

rzegląd

izczegóły



DGV Gold Standard Variants (blue=Gain; red=Loss; brown=Gain+Loss)

Track ID=hg19_dvggold [Download entire dataset]

[Click here to display in new window...](#)

This track contains a curated set of variants from a select number of studies in DGV. High resolution and high quality studies were evaluated for accuracy and sensitivity and included if they passed strict quality filters. Overlapping sample level variants were merged to create variant regions if they shared at least 70% of their length in a reciprocal manner. CNV regions were kept if there was sufficient support from multiple studies and samples indicating a high quality variant region. The initial criteria required that a variant is found in at least 2 different studies and found in at least two different samples. Information about the underlying samples, ethnicity and population distribution are recorded. This dataset will be dynamic and will continue to be updated to reflect new additions to the database.

RefSeq Genes

NUP98|NM_016320
NUP98|NM_139132
NUP98|NM_139131
NUP98|NM_005387
PGAP2|NM_001256235
PGAP2|NM_001283039
PGAP2|NM_001283038

RRM1|NM_001033
LOC100506082|NR_047550
TRIM21|NM_003141C11orf40|NM_144663
OR52K1|NM_001005171
OR52M1|NM_001004137
OR52I1|NM_001005169
TRIM68|NM_018073

OR52B4|NM_001005161
OR52K2|NM_001005172
TRIM21|NM_003141C11orf40|NM_144663
OR52K1|NM_001005171
OR52M1|NM_001004137
OR52I1|NM_001005169
OR52I2|NM_001005170
OR51E2|NM_030774
OR52R1|NM_001005177
OR51F1|NM_001004752
OR51S1|NM_001004758
OR51A7|NM_001004749
OR51G2|NM_001005238

OR51F2|NM_001004753
OR52J3|NM_001001916
OR51T1|NM_001004759
OR52E2|NM_001005164
OR52A1|NM_021801
OR52A1|NM_012
HBB|NM_001004749
HBD|NM_001005238

STIM1|NM_001277962
STIM1|NM_003156
STIM1|NM_001277961
MIR4687|NR_039835

★ 📄 📄 📄 📄 📄 Cytogenetic Bands

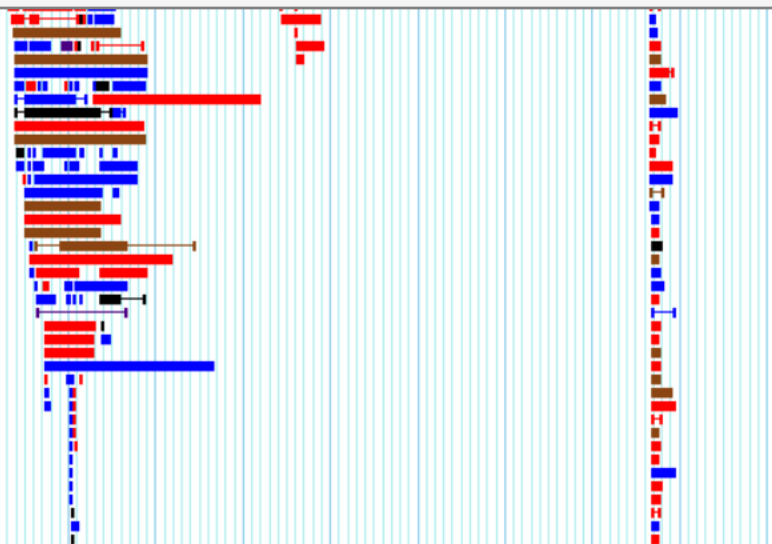
11p15.4

★ 📄 📄 📄 📄 📄 DGV Structural Variants (Blue:Gain;Red:Loss;Brown:Complex;Purple:Inversion;Black:Unknown)

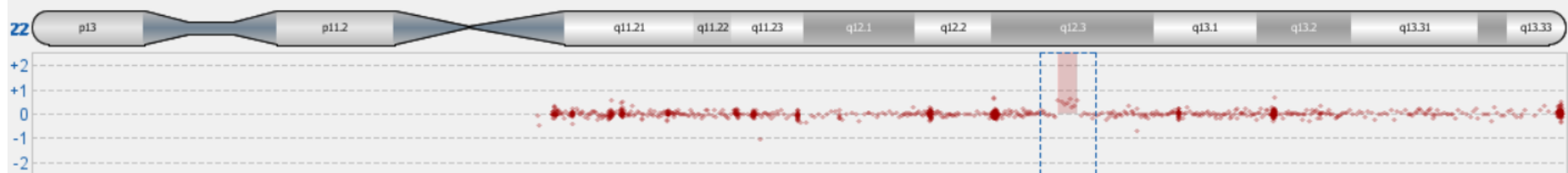
DGV Structural Variants (Blue:Gain;Red:Loss;Brown:Complex;Purple:Inversion;Black:Unknown)

Track ID=dgvvariants_v104 [Download entire dataset]

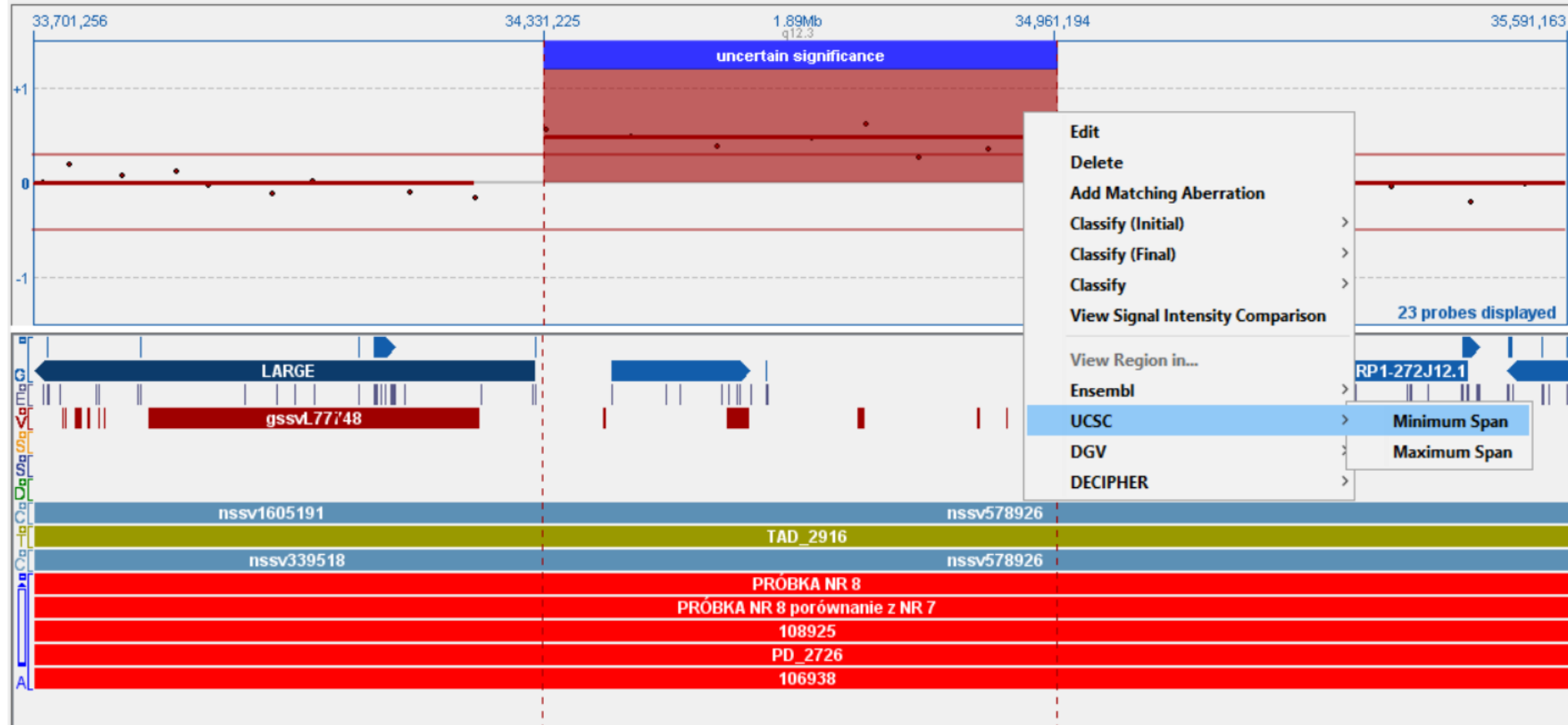
This track shows the locations of structural variations. We define structural variation as genomic alterations that involve segments of DNA that are larger than >50bp. Currently the content of the database is limited to structural variation identified in healthy control samples. The dataset is continuously updated with new data from peer reviewed research studies. Last Update: 2020/02/25



Overview



Chromosome Section



UCSC Genes pack ▾	Updated NCBI RefSeq dense ▾	AceView Genes hide ▾	AUGUSTUS hide ▾	CCDS hide ▾	CRISPR Targets hide ▾
Ensembl Genes hide ▾	17 EvoFold hide ▾	Exoniphy hide ▾	Updated GENCODE... hide ▾	Geneid Genes hide ▾	Genscan Genes hide ▾
H-Inv 7.0 hide ▾	IKMC Genes Mapped hide ▾	lincRNAs... hide ▾	LRG Transcripts hide ▾	MGC Genes hide ▾	N-SCAN hide ▾
Old UCSC Genes hide ▾	ORFeome Clones hide ▾	Other RefSeq hide ▾	Pfam in UCSC Gene hide ▾	Retroposed Genes hide ▾	SGP Genes hide ▾
SIB Genes hide ▾	sno/miRNA hide ▾	TransMap V5... hide ▾	tRNA Genes hide ▾	UCSC Alt Events hide ▾	UniProt hide ▾
Vega Genes hide ▾	Yale Pseudo60 hide ▾				

Phenotype and Literature

refresh

Publications hide ▾	New CADD... hide ▾	ClinGen full ▾	Deprecated ClinGen CNVs full ▾	ClinVar Variants full ▾	Coriell CNVs hide ▾
COSMIC Regions hide ▾	Decipher CNVs full ▾	DECIPHER SNVs hide ▾	Development Delay hide ▾	GAD View hide ▾	Gene Interactions hide ▾
GeneReviews hide ▾	GWAS Catalog hide ▾	Haploinsufficiency hide ▾	Updated HGMD Variants hide ▾	Lens Patents hide ▾	LOVD Variants hide ▾
18 MGI Mouse QTL hide ▾	OMIM Alleles hide ▾	OMIM Cyto Loci hide ▾	OMIM Genes hide ▾	18 RGD Human QTL hide ▾	18 RGD Rat QTL hide ▾
SNPedia hide ▾	UniProt Variants hide ▾	Variants in Papers... hide ▾	Web Sequences hide ▾		

COVID-19

refresh

COVID GWAS v4 hide ▾	COVID GWAS v3 hide ▾	Rare Harmful Vars hide ▾
---	---	---

mRNA and EST

refresh

18 CGAP SAGE hide ▾	Gene Bounds hide ▾	18 H-Inv hide ▾	Human ESTs hide ▾	Human mRNAs hide ▾	Human RNA Editing hide ▾
Other ESTs hide ▾	Other mRNAs hide ▾	18 Poly(A) hide ▾	PolyA-Seq hide ▾	SIB Alt-Splicing hide ▾	Spliced ESTs hide ▾

ClinGen CNVs Track Settings

Clinical Genome Resource (ClinGen) CNVs ([▲All Phenotype and Literature tracks](#))

Maximum display mode: [Reset to defaults](#)

Select views ([Help](#)):

[Coverage](#) CNVs

Coverage Configuration [Graph configuration help](#)

Type of graph:

Track height: pixels (range: 16 to 128)

Data view scaling: Always include zero:

Vertical viewing range: min: max: (range: 0 to 100)

Transform function: Transform data points by:

Windowing function: Smoothing window: pixels

Negate values: ☐

Draw y indicator lines: at y = 0.0: at y =

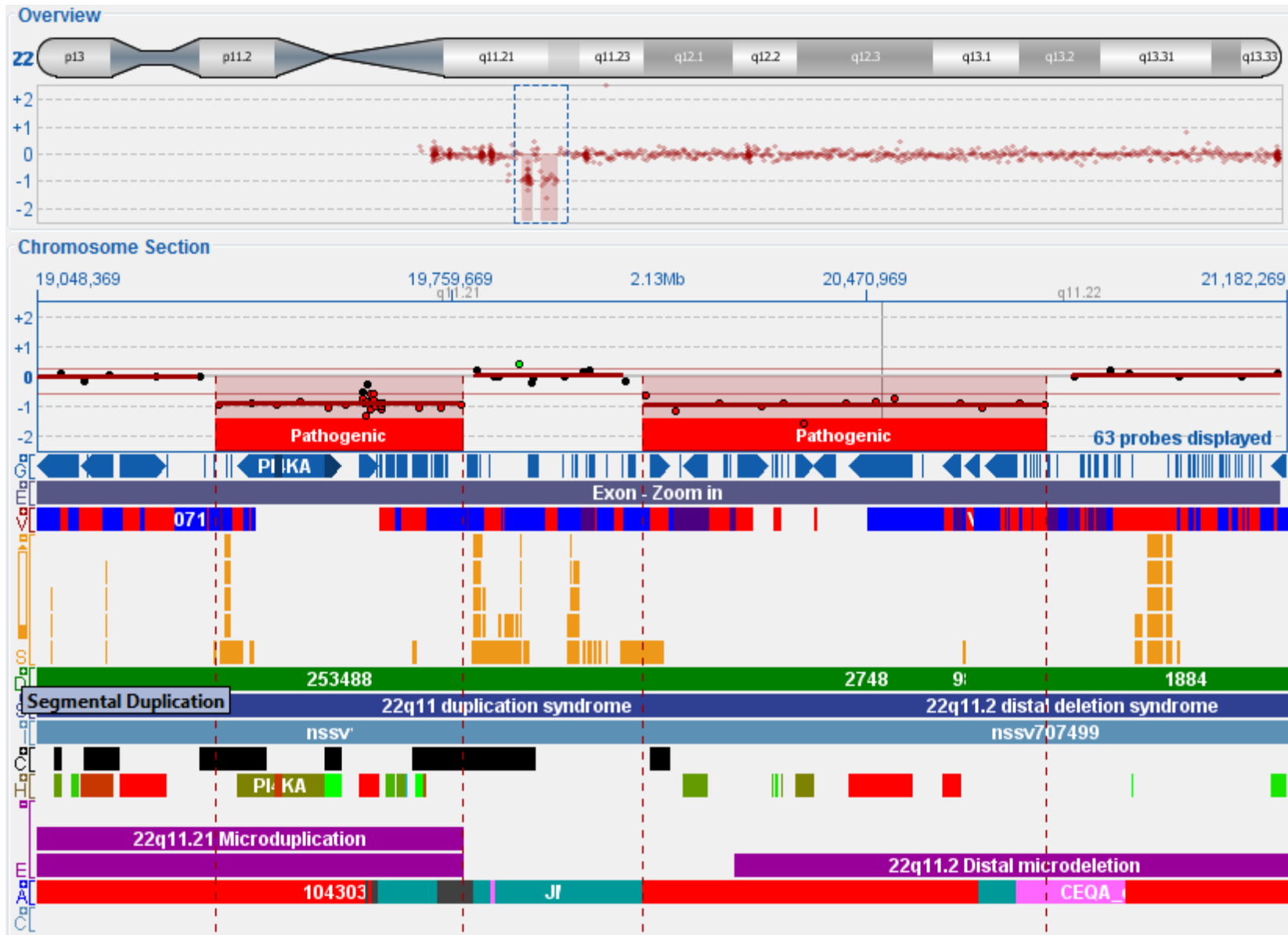
Select subtracks by evidence and class:

☐ All	☐ Evidence	☐ Curated	☐ Submitted
Class		☐ + ☐ -	☐ + ☐ -
Pathogenic	☐ + ☐ -	☐	☒
Likely Pathogenic	☐ + ☐ -		☒
Uncertain	☐ + ☐ -		☒
Likely Benign	☐ + ☐ -		☒
Benign	☐ + ☐ -	☐	☒

List subtracks: ☐ only selected/visible ☒ all (8 of 11 selected)

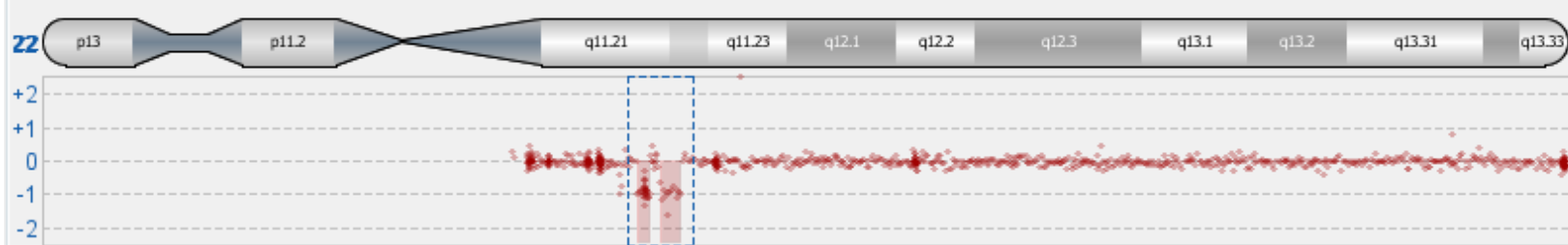
		Class ¹	Evidence ²	views ³	Track Name ⁴	
☐	pack	Benign	Curated	CNVs	ClinGen CNVs: Curated Benign	Schema
☐	pack	Benign	Submitted	CNVs	ClinGen CNVs: Benign	Schema
☒	full Configure	Benign	Submitted	Coverage	ClinGen CNVs: Benign Gain Coverage	Schema
☒	full Configure	Benign	Submitted	Coverage	ClinGen CNVs: Benign Loss Coverage	Schema
☒	pack	Likely Benign	Submitted	CNVs	ClinGen CNVs: Uncertain: Likely Benign	Schema
☒	pack	Likely Pathogenic	Submitted	CNVs	ClinGen CNVs: Uncertain: Likely Pathogenic	Schema
☐	pack	Pathogenic	Curated	CNVs	ClinGen CNVs: Curated Pathogenic	Schema
☒	pack	Pathogenic	Submitted	CNVs	ClinGen CNVs: Pathogenic	Schema
☒	full Configure	Pathogenic	Submitted	Coverage	ClinGen CNVs: Pathogenic Gain Coverage	Schema
☒	full Configure	Pathogenic	Submitted	Coverage	ClinGen CNVs: Pathogenic Loss Coverage	Schema

+ mRNA and EST						refresh
+ Expression						refresh
+ Regulation						refresh
+ Comparative Genomics						refresh
+ Neandertal Assembly and Analysis						refresh
+ Denisova Assembly and Analysis						refresh
- Variation						refresh
dbSNP 153	1000G Ph1 Accsbl	1000G Ph1 Vars	1000G Ph3 Accsbl	1000G Ph3 Vars	All SNPs(138)	
hide	hide	hide	hide	hide	hide	
All SNPs(141)	All SNPs(142)	All SNPs(144)	All SNPs(146)	All SNPs(147)	All SNPs(150)	
hide	hide	hide	hide	hide	hide	
All SNPs(151)	Common SNPs(138)	Common SNPs(141)	Common SNPs(142)	Common SNPs(144)	Common SNPs(146)	
hide	hide	hide	hide	hide	hide	
Common SNPs(147)	Common SNPs(150)	Common SNPs(151)	dbVar Common Struct Var...	DGV Struct Var	EVS Variants	
hide	hide	hide	hide	hide	hide	
ExAC	Flagged SNPs(138)	Flagged SNPs(141)	Flagged SNPs(142)	Flagged SNPs(144)	Flagged SNPs(146)	
hide	hide	hide	hide	hide	hide	
Flagged SNPs(147)	Flagged SNPs(150)	Flagged SNPs(151)	Genome In a Bottle	18 Genome Variants	GIS DNA PET	
hide	hide	hide	hide	hide	hide	
gnomAD...	HAIB Genotype	18 HapMap SNPs	HGDP Allele Freq	Mult. SNPs(138)	Mult. SNPs(142)	
hide	hide	hide	hide	hide	hide	
Mult. SNPs(144)	Mult. SNPs(146)	Mult. SNPs(147)	Mult. SNPs(150)	Mult. SNPs(151)	Platinum Genomes	
hide	hide	hide	hide	hide	hide	
SNP/CNV Arrays						
hide						
- Repeats						refresh
RepeatMasker	Interrupted Rpts	Microsatellite	NumtS Sequence	Segmental Dups	Self Chain	
hide	hide	hide	hide	full	hide	
Simple Repeats	WM + SDust					
hide	hide					

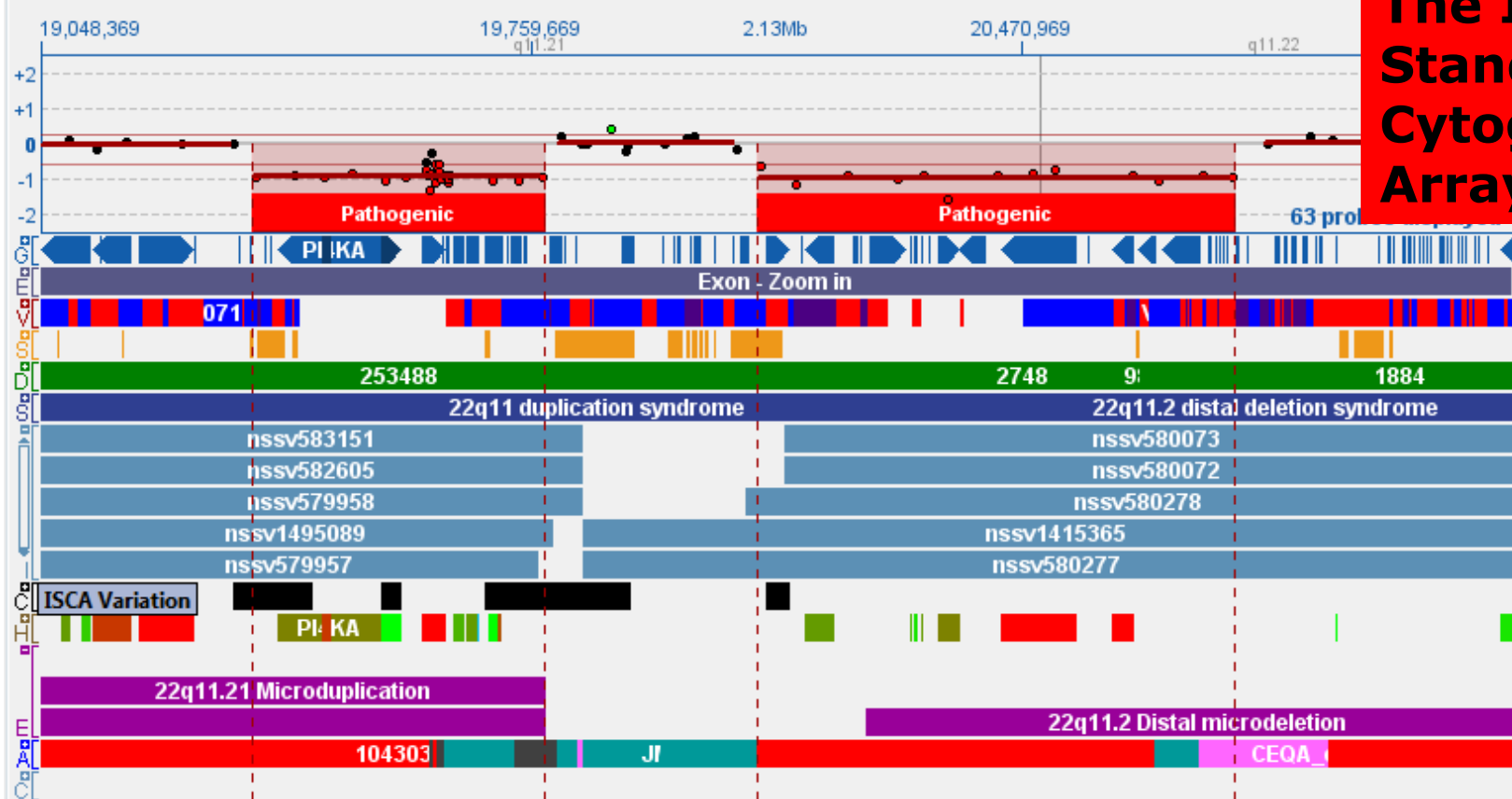


Low copy repeats - LCR

Overview



Chromosome Section



**The International
Standards for
Cytogenomic
Arrays ISCA**



International Standards for Cytogenomic Arrays

dbGaP Study Accession: phs000205.v2.p1

Note: This version of the study has been superseded. [See most recent version](#)

[Request Access](#)

▸ [Study version history](#)

Study

Phenotype Datasets

Variables

Molecular Datasets

Analyses

Documents

- [Browse all datasets within this study via Advanced Search](#)
- [List all datasets within this study](#)

Dataset Name and Accession

Dataset Name: ISCA_Subject_Phenotypes

Dataset Accession: pht001431.v2.p1

Dataset Description

Phenotype of subjects affected with different types of genetic abnormalities

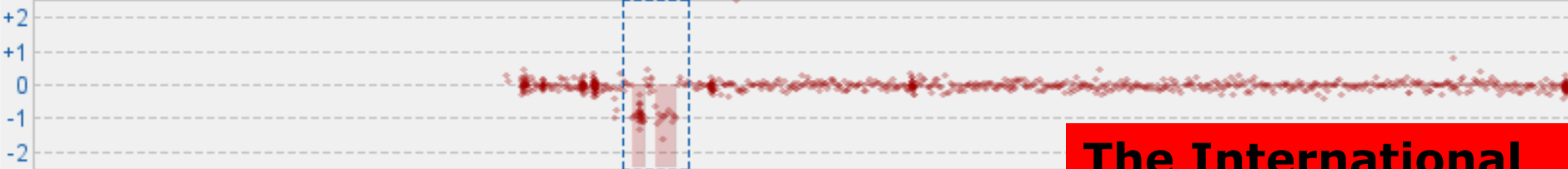
Dataset type: Simple ⓘ

Dataset Summary

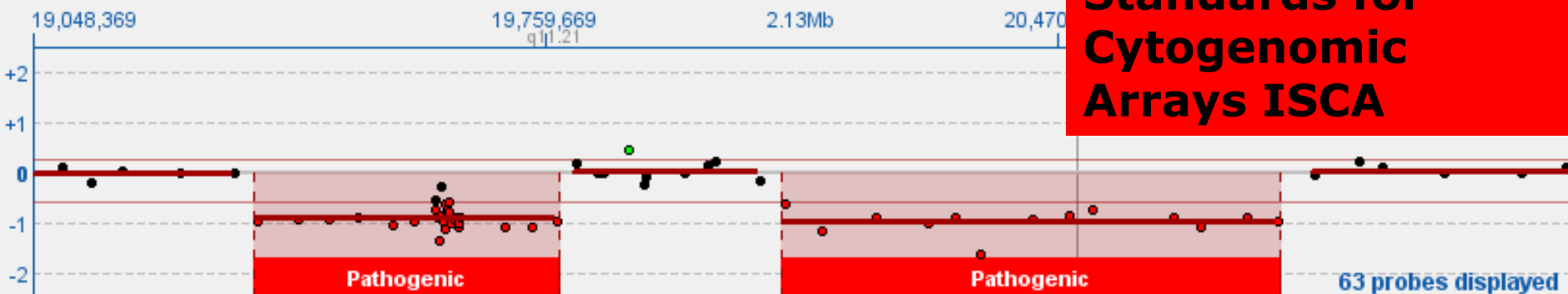
[Download Variable Report](#)

[Download Data Dictionary](#)

Overview

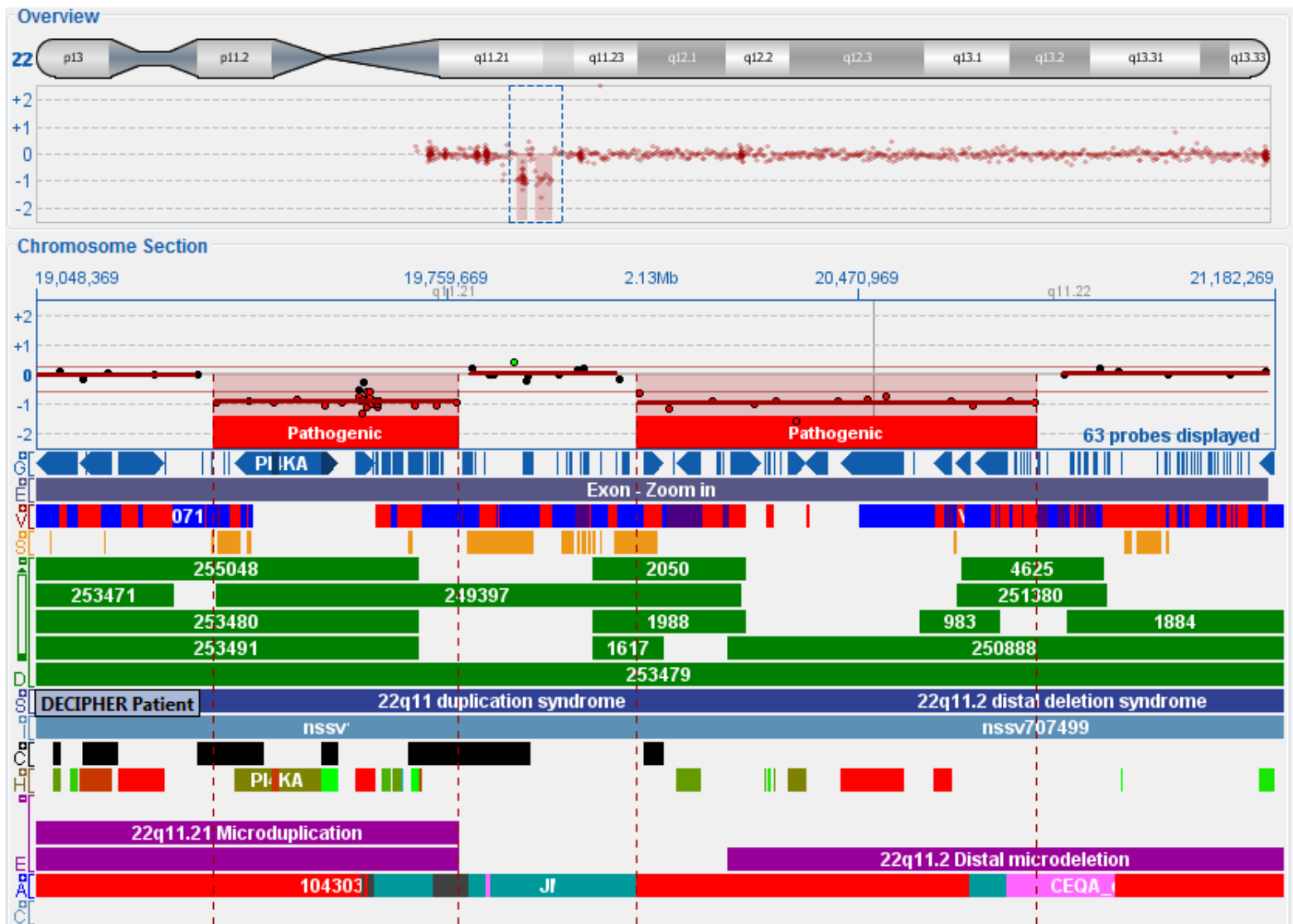


Chromosome Section



The International Standards for Cytogenomic Arrays ISCA

Location 22 : 20138950 - 21984222
Clinical Interpretation Pathogenic
Subject Phenotype Developmental delay and additional significant developmental and morphological phenotypes referred for genetic testing



DECIPHER



Our URL has changed to <https://www.deciphergenomics.org>.
Links to <https://decipher.sanger.ac.uk/> will continue to be redirected.



DECIPHER
GRCh38

About Browse ▾ DDD (UK)

Search DECIPHER



Help Join Log in ➔

Mapping the clinical genome

Explore DECIPHER

It's free and you don't need to log in

DECIPHER is used by the clinical community to share and compare phenotypic and genotypic data. The DECIPHER database contains data from 38,423 patients who have given consent for broad data-sharing; DECIPHER also supports more limited sharing via consortia. [Have a look at the numbers](#).

Anyone can browse publicly-available patient data on DECIPHER and request to be put in contact with the responsible clinician. Why? [Because sharing benefits everyone](#).

Join DECIPHER

Be part of the sharing community

Projects affiliated to DECIPHER can deposit and share patients, variants, and phenotypes to invite collaboration and facilitate diagnosis. Once deposited, you can use DECIPHER to identify and prioritise potential matches, and you can request notifications as soon as new matches arrive.

As well as influencing individual patient outcomes, use of DECIPHER has contributed to over [2600 published articles since 2004](#). It's still free, and you are in control of what data to make public.

Already a member?

Log in to access your patient data

Email address

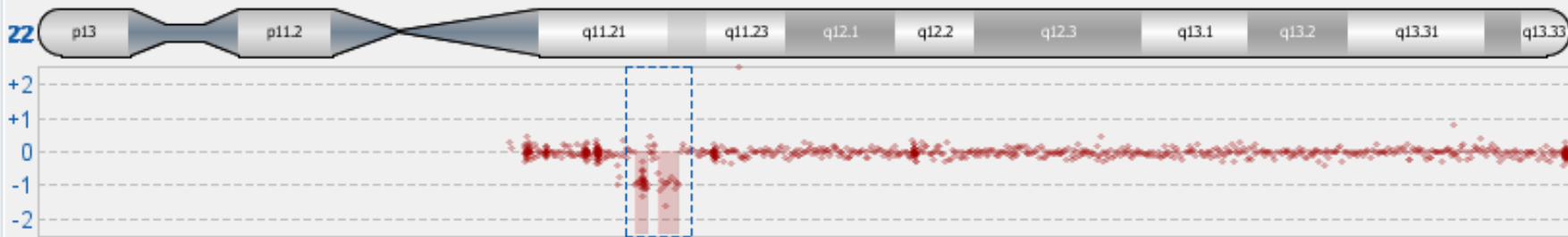
Email

Password

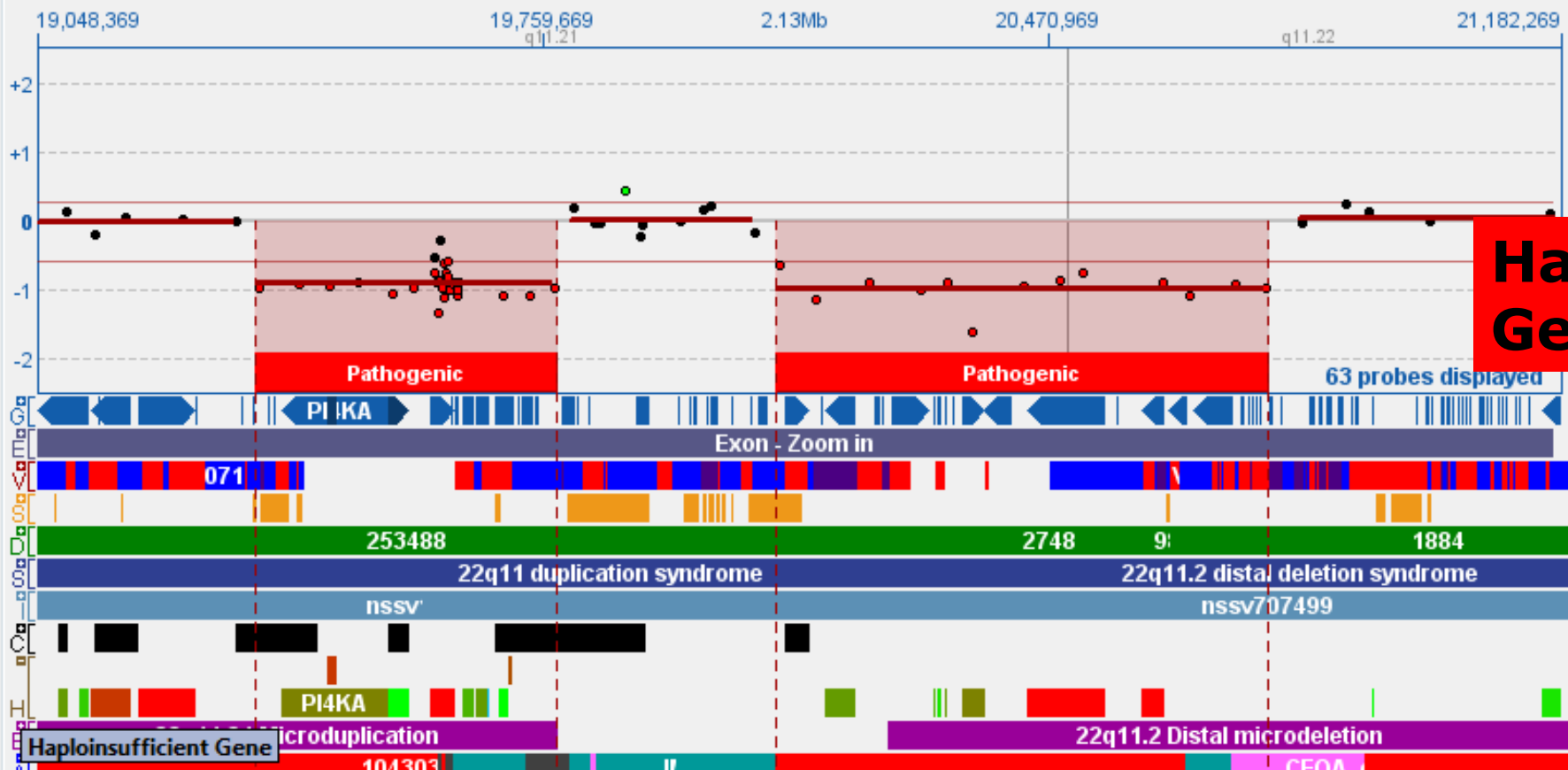
Password

Log in

Overview



Chromosome Section



Haploinsufficient Genes

Ocena „wrażliwości na dawkę”

OPEN ACCESS Freely available online

PLoS GENETICS

Characterising and Predicting Haploinsufficiency in the Human Genome

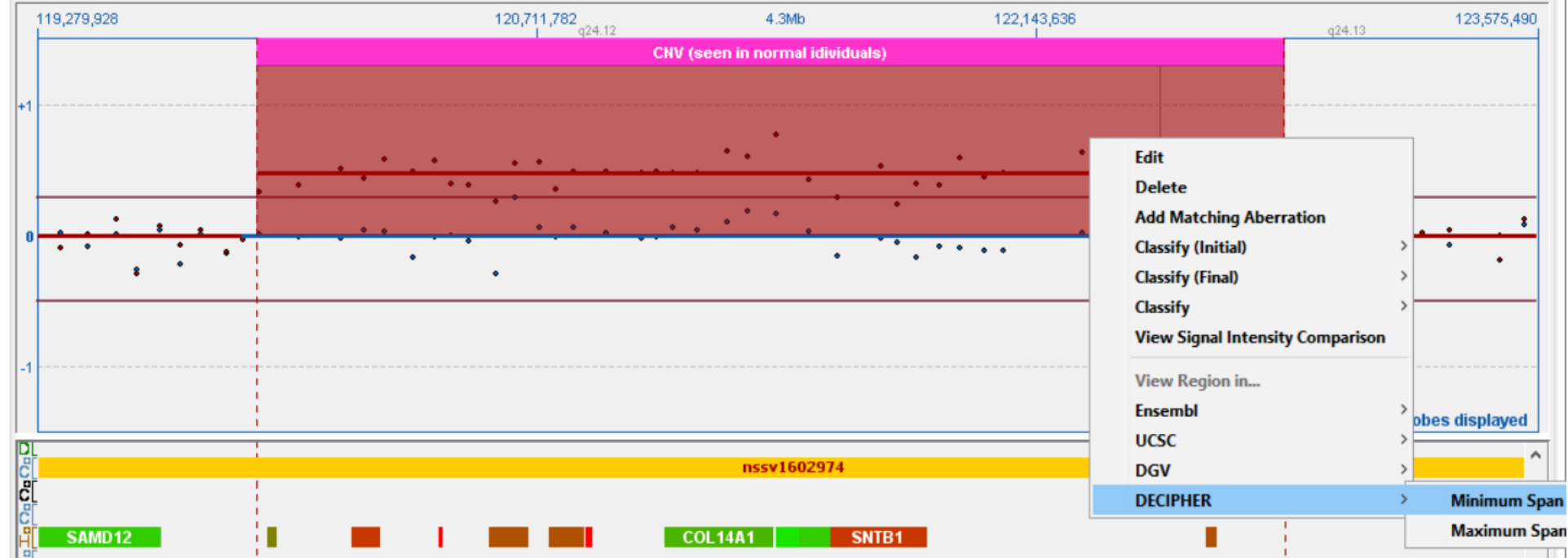
Ni Huang¹, Insuk Lee^{2,3}, Edward M. Marcotte², Matthew E. Hurles^{1*}

¹ Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Cambridge, United Kingdom, ² Center for Systems and Synthetic Biology, Department of Chemistry and Biochemistry, Institute for Cellular and Molecular Biology, University of Texas, Austin, Texas, United States of America, ³ Department of Biotechnology, College of Life Science and Biotechnology, Yonsei University, Seoul, South Korea

Overview



Chromosome Section



Search results for "8:119911864-122847565" [\(Refine Search\)](#)

Patient variants **57**

CNV syndrome variants **0**

DDD research variants **1**

Genes **15**

Results

Browser

Variants: 1 to 10 of 57

Show:

All variant types

Filter...

DECIPHER Patient	Sex	Location	Size	Inheritance / Genotype	Pathogenicity / Contribution	Phenotype(s)	Contact
	▲ ? ▼		▼	▼	▼ ? ▼		▼
248605	Other	8 119555793 120702839 ? GRCh38 Duplication	1.15 Mb	Inherited from parent with similar phenotype to child Heterozygous			
249525	Unknown	8 119629941 138371840 ? GRCh38 Deletion	18.74 Mb	Unknown Heterozygous		Intellectual disability	
251369	46XY	8 112882803 145068712 ? GRCh38	32.19 Mb	De novo Heterozygous		Intellectual disability	

Search results for "8:118899625-121835325" [\(Refine Search\)](#)

Patient variants **68**

CNV syndrome variants **0**

DDD research variants **1**

Genes 25

Genes: 1 to 10 of 25

Show: ☐ OMIM ☐ Morbid ☐ DDG2P ☐ ClinGen ☐ Protein coding

Name / Description	Location	pLI	LOEUF	sHet	%HI	OMIM / Morbid	DDG2P	ClinGen	Links
		?	?	?	?		?	?	
CCN3 cellular communication network factor 3	8 119416446 119424434	0.01	0.81	-	-	OMIM	-	-	View
COL14A1 collagen type XIV alpha 1 chain	8 120059780 120373573	0.00	0.54	0.047	6.75	OMIM	-	-	View
COLEC10 collectin subfamily member 10	8 118995452 119108455	0.00	0.96	0.043	36.63	OMIM Morbid	Probable: Biallelic	-	View
CYCSP23 CYCS pseudogene 23	8 119618162 119618474	-	-	-	-	-	-	-	View
DEPTOR DEP domain containing MTOR interacting protein	8 119873717 120050918	0.00	1.43	0.010	32.17	OMIM	-	-	View

Search results for "8:118899625-121835325" [\(Refine Search\)](#)

Patient variants **68**

CNV syndrome variants **0**

DDD research variants **1**

Genes **25**

Genes: 1 to 10 of 13 (out of 25 total)

Show: ☐ OMIM ☐ Morbid ☐ DDG2P ☐ ClinGen ☒ Protein coding

Name / Description	Location	pLI	LOEUF	sHet	%HI	OMIM / Morbid	DDG2P	ClinGen	Links
		?	?	?	?		Y	?	?
HAS2 hyaluronan synthase 2	8 121612116 121641440	0.99	0.28	0.242	4.07	OMIM	-	-	View
COL14A1 collagen type XIV alpha 1 chain	8 120059780 120373573	0.00	0.54	0.047	6.75	OMIM	-	-	View
MRPL13 mitochondrial ribosomal protein L13	8 120380761 120445402	0.00	1.52	0.008	12.31	OMIM	-	-	View
TNFRSF11B TNF receptor superfamily member 11b	8 118923557 118951885	0.16	0.55	0.030	13.91	OMIM Morbid	-	-	View
TAF2 TATA-box binding protein associated factor 2	8 119730774 119832841	0.00	0.42	0.032	15.82	OMIM Morbid	-	Haploinsufficiency: 30 Triplosensitivity: 0	View

pHI (or %HI): Probability of being a haploinsufficient gene

A haploinsufficient gene is one which requires two functional copies to produce the standard phenotype. The probability that a gene is haploinsufficient based on a set of functional, evolutionary, and network properties of the gene. The properties from a set of known haplosufficient and a set of known haploinsufficient genes were used to train the model that predicted each gene's pHI. Percentages refer to genome-wide percentiles of genes ranked according to their haploinsufficient score. High ranks (e.g. **0-10%**) indicate a gene is more likely to exhibit haploinsufficiency, low ranks (e.g. 90-100%) indicate a gene is more likely to NOT exhibit haploinsufficiency.

Over 17,000 protein coding genes have been scored according to their predicted probability of exhibiting haploinsufficiency. These predictions are generated using a classification model trained on two datasets:

- known haploinsufficient genes and
- genes disrupted by unambiguous loss-of-function variants in at least two apparently healthy individuals.

The model uses sequence conservation, expression patterns and proximity within a gene network to known haploinsufficient genes as predictor variables. Missing predictor variables are imputed using other gene properties before prediction.

The manuscript describing the generation and validation of these haploinsufficiency predictions ([Huang et al., 2010](#)) is published in PLoS Genetics. Updated predictions of haploinsufficiency can be downloaded from our [data download page](#).

OK

hyaluronan synthase 2

COL14A1

collagen type XIV alpha 1 chain

8

120059780
120373573

0.00

0.54

0.047

6.75

OMIM

-

-

View

MRPL13

mitochondrial ribosomal protein L13

8

120380761
120445402

0.00

1.52

0.008

12.31

OMIM

-

-

View

TNFRSF11B

TNF receptor superfamily member
11b

8

118923557
118951885

0.16

0.55

0.030

13.91

OMIM
Morbid

-

-

View

TAF2

TATA-box binding protein associated

8

119730774
119832841

0.00

0.42

0.032

15.82

OMIM
Morbid

-

Haploinsufficiency: 30
Triplosensitivity: 0

View

Search results for "8:118899625-121835325" ([Refine Search](#))

Patient variants **68**

CNV syndrome variants **0**

DDD research variants **1**

Genes **25**

Genes: 1 to 3 of 3 (out of 25 total)

Show: ☐ OMIM ☒ Morbid ☐ DDG2P ☐ ClinGen ☒ Protein coding

Name / Description	Location	pLI	LOEUF	sHet	%HI	OMIM / Morbid	DDG2P	ClinGen	Links
		?	?	?	?		?		?
TNFRSF11B TNF receptor superfamily member 11b	8 118923557 118951885	0.16	0.55	0.030	13.91	OMIM Morbid	-	-	View
TAF2 TATA-box binding protein associated factor 2	8 119730774 119832841	0.00	0.42	0.032	15.82	OMIM Morbid	-	Haploinsufficiency: 30 Triplosensitivity: 0	View
COLEC10 collectin subfamily member 10	8 118995452 119108455	0.00	0.96	0.043	36.63	OMIM Morbid	Probable: Biallelic	-	View

10

Previous1Next

TNFRSF11B 8:118923557-118951885

Reverse strand gene: TNF receptor superfamily member 11b

Formerly known as: **OPG**

Also known as: **TR1, OCIF, ENSG00000164761**

Function: "Acts as decoy receptor for TNFSF11/RANKL and thereby neutralizes its function in osteoclastogenesis. Inhibits the activation of osteoclasts and promotes osteoclast apoptosis in vitro. Bone homeostasis seems to depend on the local ratio between TNFSF11 and TNFRSF11B. May also play..." [Show more >>](#) Source: [UniProt](#)

DECIPHER holds no open-access sequence variants in this gene

Overview

Matching patient variants 28

Matching DDD research variants 0

Phenotypes

Phenotype browser

Transcripts 3

Browser

Clinical

Protein / Genomic

Gene/disease association

OMIM

602643

Morbid

[Paget disease of bone 5, juvenile-onset](#) (Autosomal recessive)

DDG2P ?

-

Gene disorders

ClinGen gene/disease ?

-

ClinGen DS ?

-

Predictive scores

pLI 0.16 ?

%HI 13.91 ?

LOEUF 0.55 ?

sHet 0.030 ?

Search databases

- [PubMed](#)
- [Gene Tests](#)
- [Genomics England PanelApp](#) ?
- [LSDB](#)
- [Entries in DECIPHER for this gene](#)



ClinGen Dosage Sensitivity Map

The Clinical Genome Resource (ClinGen) consortium is curating genes and regions of the genome to assess whether there is evidence to support that these genes/regions are dosage sensitive and should be targeted on a cytogenomic array.

All data are shown in GRCh37 and GRCh38 coordinates.

New! The ClinGen Dosage Sensitivity curations and downloads that are available at this site are now also available at www.clinicalgenome.org. Click on the button to access Dosage Sensitivity in the context of ClinGen's other curated information, including Gene-Disease Validity and Clinical Actionability.

[See New Dosage Map](#)

ClinGen is seeking the genetics and broader medical community's valuable feedback on our work, tools, and resources, our 10 min survey is open to ClinGen contributors, users of ClinGen resources and those new to our work - we look forward to your input.

[Provide Feedback](#)

Search By Gene Name

Symbol:

Or click on the following examples: [ZEB2](#), [PTEN](#), [MAPT](#)

Search By Location (GRCh37, GRCh38)

GRCh37: ☒ GRCh38: ☐

Location:

Examples: [chr2:44,000,000-45,500,000](#), [2p21-2p16.2](#)

Links

[ClinGen Home Page](#)

[Help with this site](#)

[FAQ](#)

[Contact Us](#)

[Curation of Recurrent CNVs](#)

[Curation of the ACMG 59 Genes](#)

[FTP](#)

Submitted location: chr8:119,911,864-122,847,565

"N/A" indicates that this gene has not yet been evaluated

Gene Issues (29)

Region Issues (0)

Location search results

Items 1 - 20 of 29

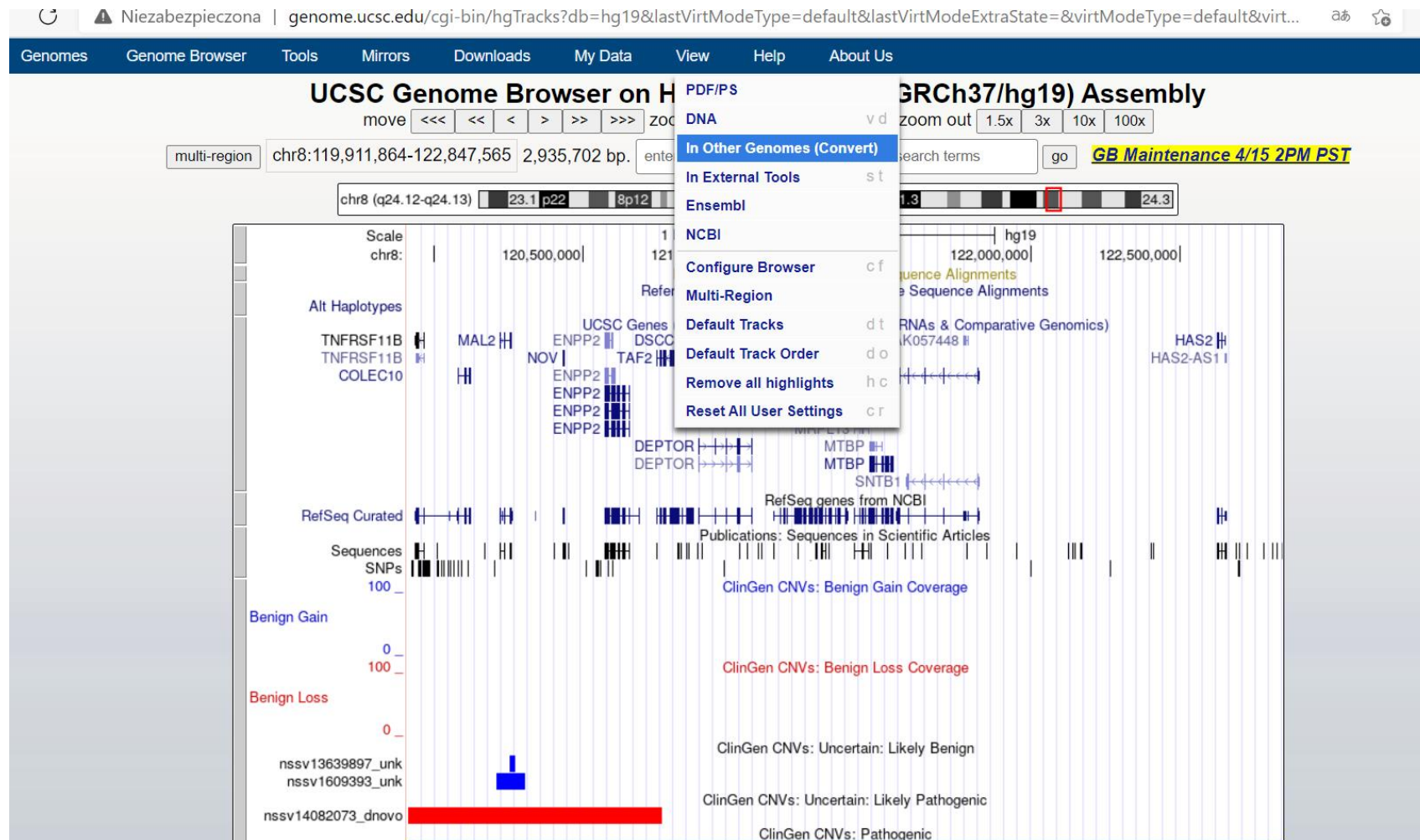
< Prev

Page 1 of 2

Next >

Gene Symbol	Haploinsufficiency score	Triplosensitivity score	Curation Status	Region Location (GRCh37)	ExAC pLI	OMIM	Relationship to Submitted Location	ISCA ID
TNFRSF11B	30: Gene associated with autosomal recessive phenotype	Not yet evaluated	Complete	chr8:119,935,796-119,964,383	0.272	602643	Contained	ISCA-20688
TAF2	30: Gene associated with autosomal recessive phenotype	0	Complete	chr8:120,743,014-120,845,074	0.566	604912	Contained	ISCA-6904
COLEC10	N/A	N/A	Awaiting Review	chr8:119,964,406-120,120,694	0.099	607620	Contained	ISCA-13893
RNU6-12P	N/A	N/A	Awaiting Review	chr8:119,988,752-119,988,857			Contained	ISCA-40431
LOC100286746	N/A	N/A	Awaiting Review	chr8:119,994,249-119,995,180			Contained	ISCA-26370
LOC101927513	N/A	N/A	Awaiting Review	chr8:120,075,181-120,081,021			Contained	ISCA-41064
MAL2	N/A	N/A	Awaiting Review	chr8:120,220,610-120,257,913	0.459	609684	Contained	ISCA-12713
MIR548AZ	N/A	N/A	Awaiting Review	chr8:120,337,411-120,337,505			Contained	ISCA-38163
NOV	N/A	N/A	Awaiting Review	chr8:120,428,552-120,436,678	0.114	164958	Contained	ISCA-23866

Konwertowanie pomiędzy bazami



← → ↻ ⚠ Niezabezpieczona | genome.ucsc.edu/cgi-bin/hgConvert?hgsid=1087230757_xxjEklhopkiUXORWSkZRFMaAtZkR&db=hg19

Genomes Genome Browser Tools Mirrors Downloads My Data Projects Help About Us

Convert chr8:119911864-122847565 to New Assembly

Old Genome: Human	Old Assembly: Feb. 2009 (GRCh37/hg19)	New Genome: Human	New Assembly: Dec. 2013 (GRCh38/hg38) Dec. 2013 (GRCh38/hg38) Mar. 2006 (NCBI36/hg18) May 2004 (NCBI35/hg17)	Submit
----------------------	--	---	---	---------------------------------------



← → ↻ ⚠ Niezabezpieczona | genome.ucsc.edu/cgi-bin/hgConvert?hgsid=1087230757_xxjEklhopkiUXORWSkZRFMaAtZkR&hglft_toOrg=Human&hglft_toDb=h... a 星星 收藏夹 用户 ...

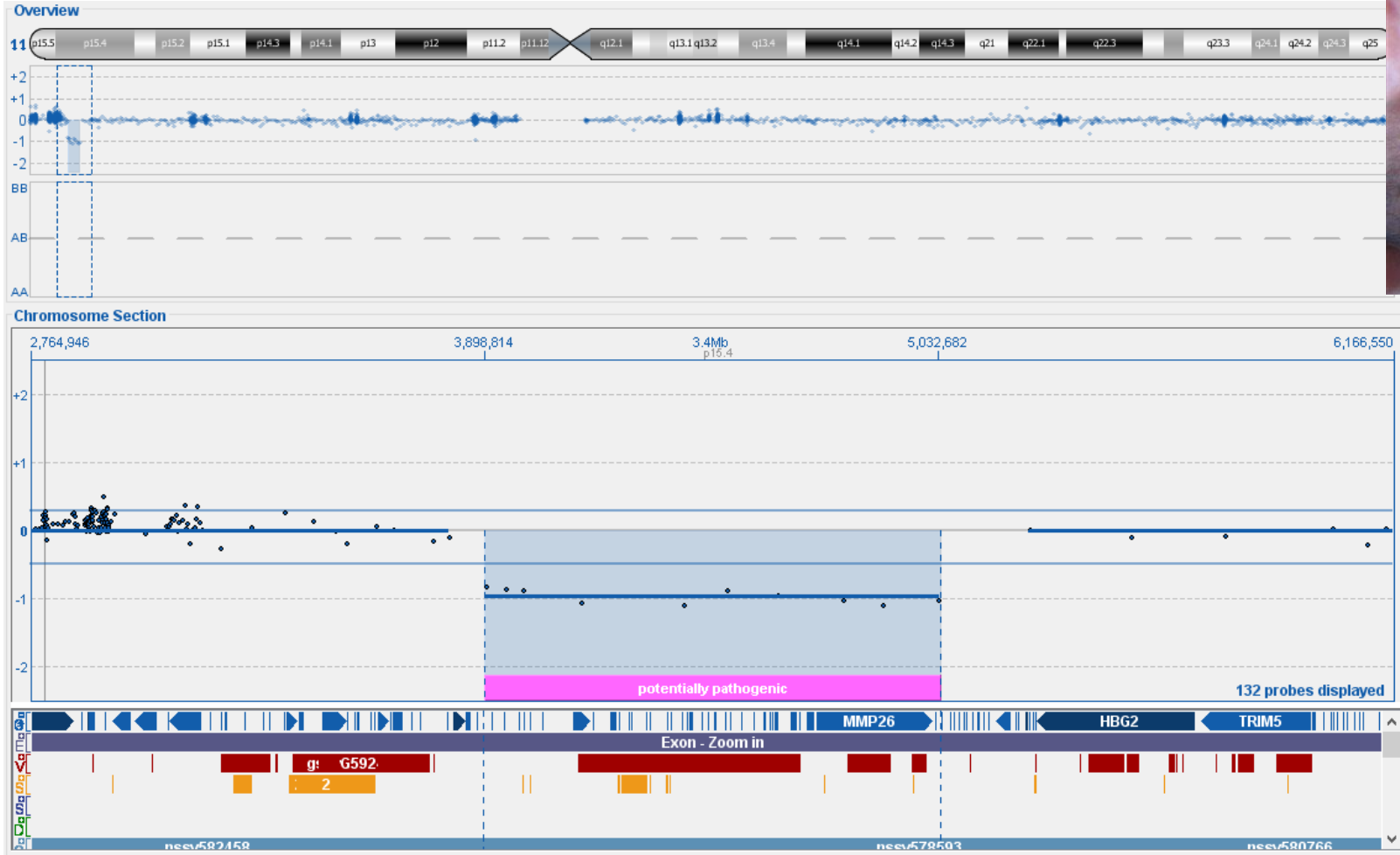
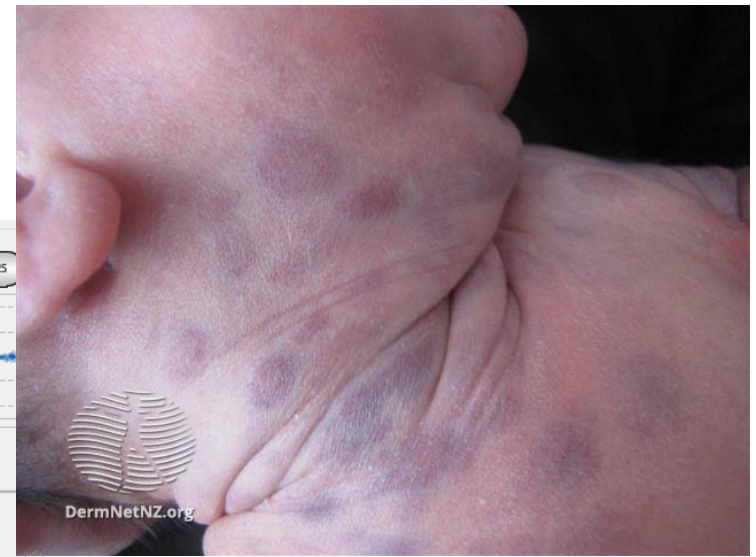
Genomes Genome Browser Tools Mirrors Downloads My Data Projects Help About Us

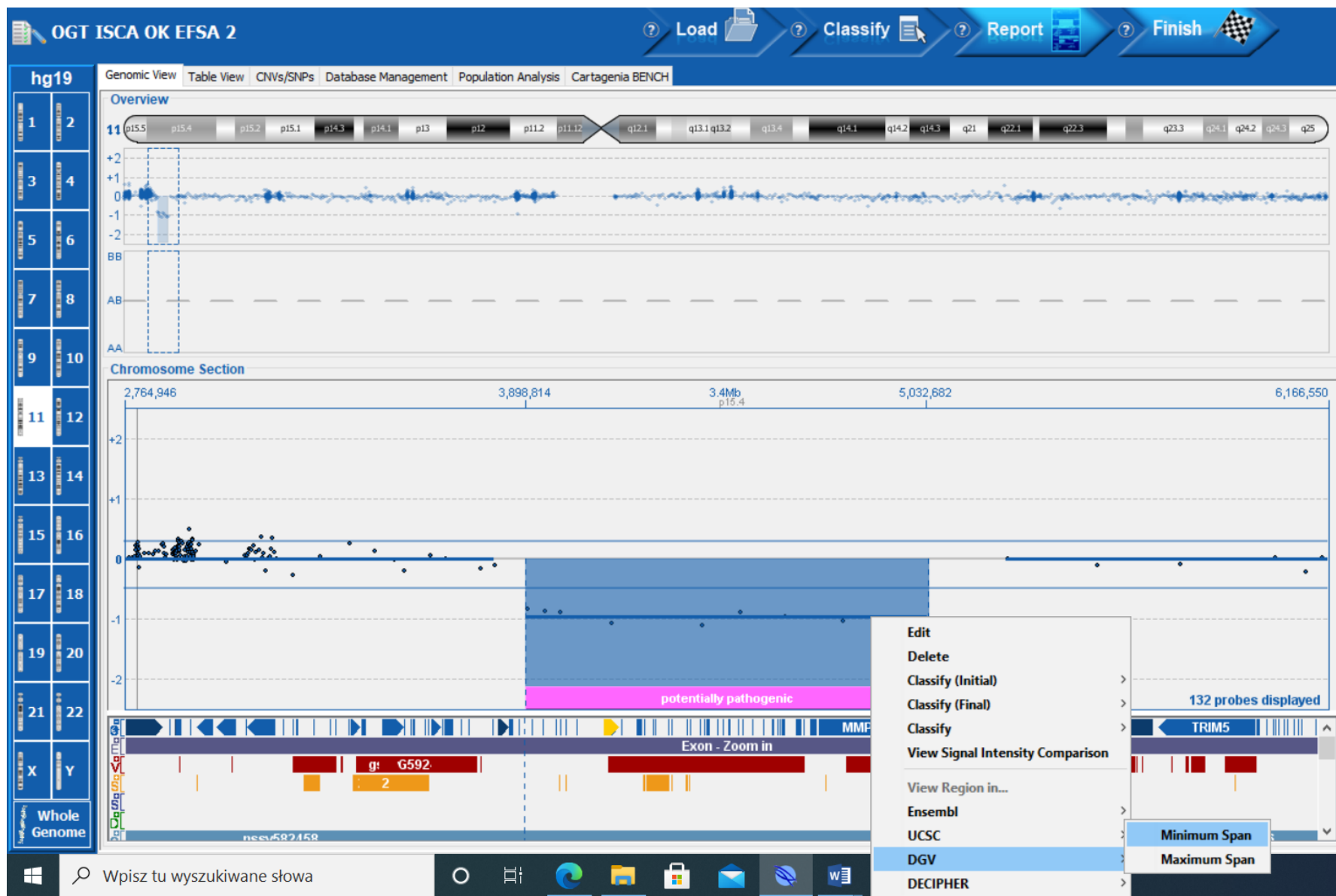
Human Feb. 2009 (GRCh37/hg19) chr8:119911864-122847565 to Human Dec. 2013 (GRCh38/hg38)

[chr8:118899625-121835325](#) (100.0% of bases, 100.0% of span)



2-dniowy noworodek, chłopiec, spodziectwo, blueberry muffin baby syndrome.
arr[hg19] 11p15.4(3,898,814-5,032,682)x1 ~1,3 Mbp





lub fragment:

3,808,940..5,260,467

Szukaj

ady: chr7:71890181..72690180, CFTR, AC108171.3, ns529033.

danych

mic Variants in Human Genome (Build GRCh37: Feb. 2009, hg19) ▾

Przewijanie/powiększenie: << < > >>

Widoczność 1.452 Mbp ▾



Skieruj oś przeciwnie

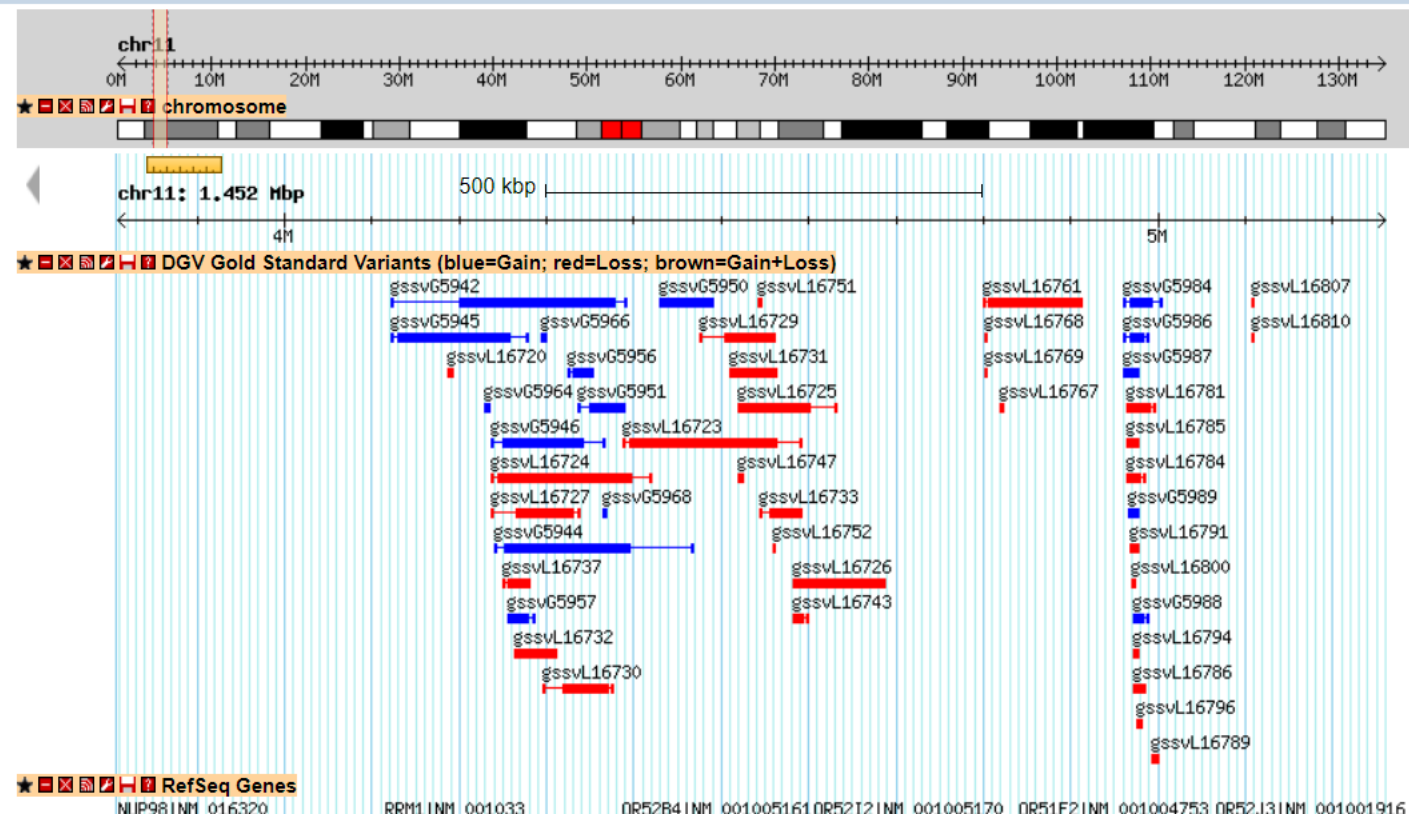
variants



Reset

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góły





Our URL has changed to <https://www.deciphergenomics.org>.

Links to <https://decipher.sanger.ac.uk/> will continue to be redirected.

[About](#)[Browse](#) ▾[DDD \(UK\)](#)[Help](#) [Join](#) [Log in](#) ➔

Search results for "11:3877584-5011452" ([Refine Search](#))

[Patient variants](#) 62[CNV syndrome variants](#) 0[DDD research variants](#) 5[Genes](#) 59

Genes: 1 to 10 of 33 (out of 59 total)

Show: ☐ OMIM ☐ Morbid ☐ DDG2P ☐ ClinGen ☒ Protein coding

Name / Description	Location	pLI	LOEUF	sHet	%HI	OMIM / Morbid	DDG2P	ClinGen	Links
		?	?	?	?		?	?	
RRM1 ribonucleotide reductase catalytic subunit M1	11 4094707 4138932	1.00	0.10	0.351	2.49	OMIM	-	-	View ▾
STIM1 stromal interaction molecule 1	11 3854527 4093210	0.06	0.64	0.054	5.93	OMIM Morbid (3)	-	-	View ▾
OR51E1 olfactory receptor family 51 subfamily E member 1	11 4643420 4655488	0.00	1.68	0.008	55.81	OMIM	-	-	View ▾
OR51L1 olfactory receptor family 51 subfamily L member 1	11 4994851 5005536	-	-	0.015	63.18	-	-	-	View ▾
OR51E2 olfactory receptor family 51	11 4680171 4697854	0.00	1.68	0.015	64.41	OMIM	-	-	View ▾

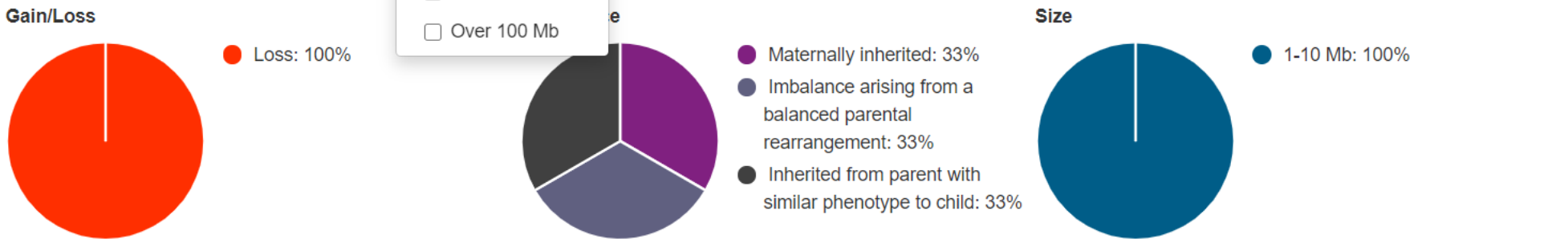


Gain/Loss
Size

Loss

1-10 Mb

☐ 0.01-0.1 Mb
☐ 0.1-1 Mb
☒ 1-10 Mb
☐ 10-100 Mb
☐ Over 100 Mb



hg19

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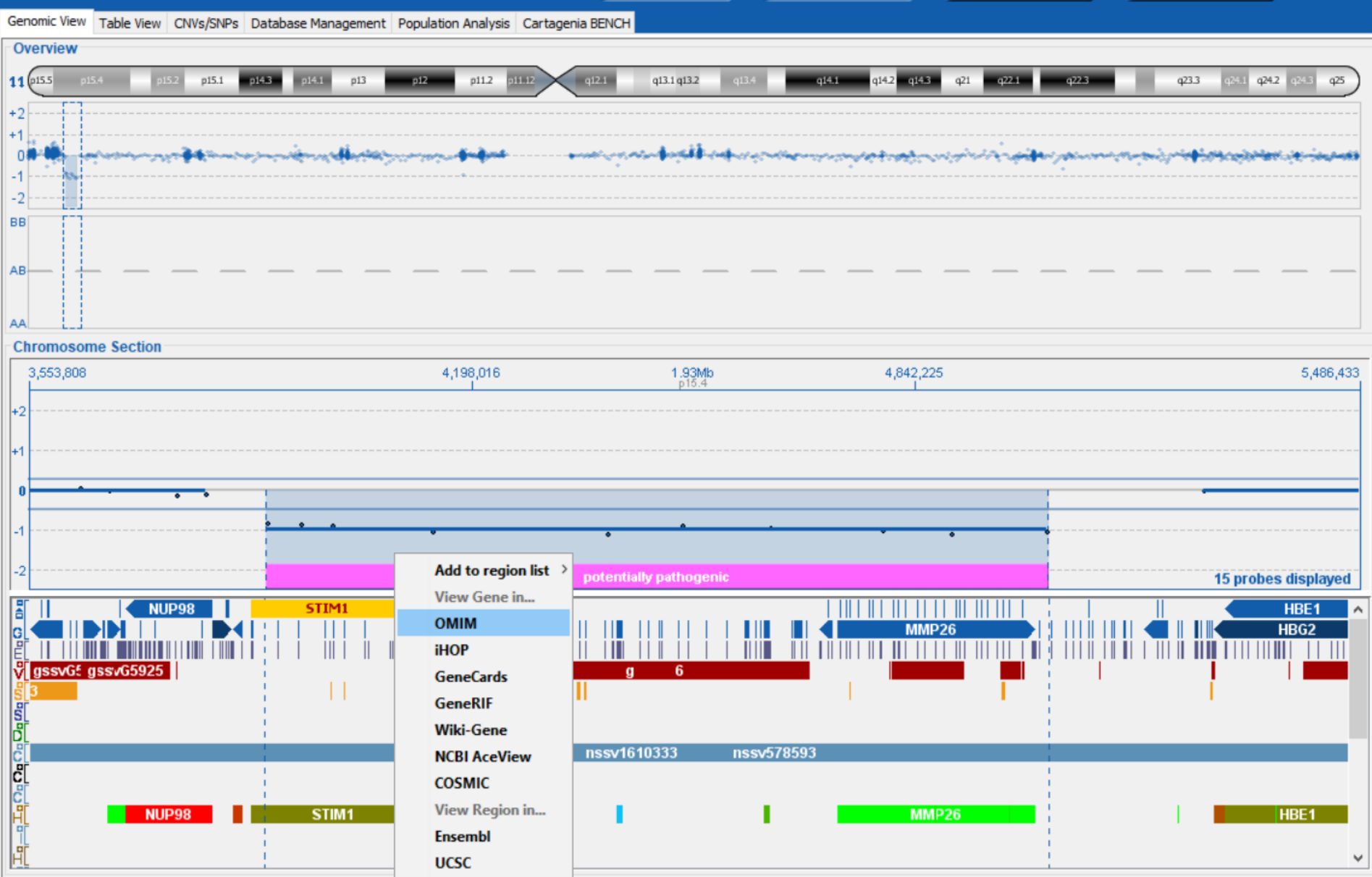
21

22

X

Y

Whole Genome



Raw Normalised Smoothed Display Filtered?

Sample Information

Experiment: Sample (M) / Reference

Sample ID : 113453

Phenotype :

FE File : SG19299145_257517733860_113

Design : 075177 (075177)

Mapped Probes : 58790/61538

X-Separation : -0.018707376

DLR Spread : 0.1129

Red Signal Intensity : 1,410.31

Green Signal Intensity : 1,419.79

Red Background Noise : 2.7008

Aneuploidy Summary

CNV Regions LOH Regions Target Regions

Chr...	Start	Stop	# P...	Cl...	Size
1	1490...	1494...	8	Und...	392...
7	1424...	1424...	22	Und...	12.2...
8	7113...	7881...	28	Und...	767...
9	340203	348963	3	Und...	8.76Kb
10	8898...	8924...	10	Und...	258...
10	1352...	1353...	8	Und...	90.4...
11	3898...	5032...	10	Und...	1.13...
15	6746...	6747...	5	Und...	6.84Kb
17	4421...	4448...	34	Und...	271...
22	1866...	1884...	5	Und...	186...
22	2146...	2166...	9	Und...	193...

Add Remove Export

*605921

Table of Contents

Title

Gene-Phenotype
Relationships

Text

Description

Cloning and
Expression

Gene Function

Gene Structure

Mapping

Molecular Genetics

Animal Model

Allelic Variants

Table View

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Contributors

Creation Date

Edit History

* 605921

STROMAL INTERACTION MOLECULE 1; STIM1

HGNC Approved Gene Symbol: [STIM1](#)

Cytogenetic location: [11p15.4](#) Genomic coordinates (GRCh38): [11:3,854,603-4,093,209](#) (from NCBI)

Gene-Phenotype Relationships

Location	Phenotype Clinical Synopses	Phenotype MIM number	Inheritance	Phenotype mapping key
11p15.4	Immunodeficiency 10	612783	AR	3
	Myopathy, tubular aggregate, 1	160565	AD	3
	Stormorken syndrome	185070	AD	3

PheneGene Graphics 

TEXT

▼ Description

STIM1 is a calcium sensor that conveys the calcium load of the endoplasmic reticulum (ER) to store-operated channels (SOCs) at the plasma membrane ([Yuan et al., 2007](#)). 

▼ Cloning and Expression

▼ External Links

► [Genome](#)

► [DNA](#)

► [Protein](#)

► [Gene Info](#)

► [Clinical Resources](#)

▼ Variation

[1000 Genome](#)
[ClinVar](#)
[gnomAD](#)
[GWAS Catalog](#)
[GWAS Central](#)
[HGMD](#)
[HGVS](#)
[NHLBI EVS](#)
[PharmGKB](#)

► [Animal Models](#)

► [Cellular Pathways](#)

WYNIK:

arr[GRCh37] 11p15.4(3898814_5032682)x1

INTERPRETACJA:

Stwierdzono niezrównoważenie genomu w postaci delecji krótkiego ramienia chromosomu 11 pary w regionie 11p15.4 o wielkości ~1,13 Mbp.

Delecja obejmuje 31 genów kodujących białka, w tym geny: *TRIM21* (OMIM 109092)¹, *TRIM68* (OMIM 613184)¹, *OR51E1* (OMIM 611267)¹, *OR51E2* (OMIM 611268)¹, *MMP26* (OMIM 605470)¹ oraz eksony 2-13 wrażliwego na dawkę genu *STIM1* (OMIM 605921)¹ i wrażliwy na dawkę gen *RRM1* (OMIM 180410)¹. Mutacje w genie *STIM1* opisywane są u pacjentów z dziedzicznym w sposób autosomalny dominujący zespołem Stormorkena (trombocytopatia - brak śledziony - mioza) (STRMK, OMIM 185070)¹ i miopatią z tubularnymi agregatami (TAM1, OMIM 160565)¹ oraz dziedzicznym w sposób autosomalny recesywny złożonym niedoborem odporności z powodu deficytu STIM1 (IMD10, OMIM 612783)¹. U pacjentów z zespołem Stormorkena opisywane są zmiany skórne (plamica, rybia łuska)⁴.

W literaturze opisano pacjenta z epsilon-gamma-delta-beta talasemią, u którego stwierdzono patogenną delecję w regionie 11p15.4 o wielkości ~2,2 Mbp (chr11:4073950_6274517), obejmującą klaster genów β -globiny: *HBE1*, *HBG1*, *HBG2*, *HBD* i *HBB* oraz eksony 4-12 genu *STIM1*². Epsilon-gamma-delta-beta talasemię opisano również u pacjenta ze zmianami o charakterze *blueberry muffin*, u którego stwierdzono delecję w regionie 11p15.4 o wielkości ~59 kbp, obejmującą 3 geny z klastra genów β -globiny³.

Aberracja należy do zmian o charakterze potencjalnie patogennym.

ZALECENIA:

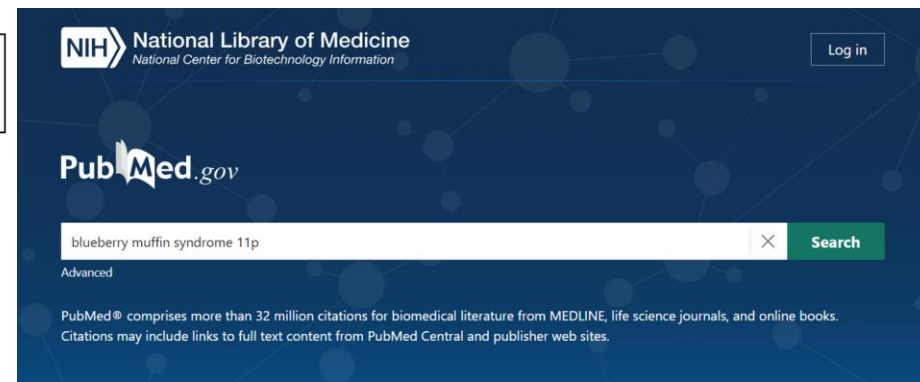
Wskazana konsultacja w Poradni Genetycznej.

W celu pełnej interpretacji wyniku badania, ustalenia pochodzenia stwierdzonej aberracji oraz określenia ryzyka genetycznego w rodzinie należy wykonać badania metodą FISH u pacjenta i jego rodziców. W tym celu należy pobrać od nich krew na heparynę.

ŹRÓDŁA INFORMACJI:

1. <https://omim.org>
2. Repnikova E, Roberts J, Mc Dermott S, Farooqi MS, Iqbal NT, Silvey M, Nolen J, Taboada E, Li W. Clinical and molecular characterization of novel deletions causing epsilon gamma delta beta thalassemia: Report of two cases. *Pathol Res Pract* Oct;215(10):152578.

Strona 1 z 2



Case Reports > *Pediatr Dev Pathol*. Nov-Dec 2019;22(6):599-600.

doi: 10.1177/1093526619850663. Epub 2019 May 14.

Blueberry Muffin Skin Lesions in an Infant With Epsilon Gamma Delta Beta Thalassemia

Neha Puar¹, Brandon Newell², Lei Shao³

Affiliations + expand

PMID: 31088202 DOI: 10.1177/1093526619850663

Portal o chorobach rzadkich i lekach sierocych

"Choroby rzadkie występują sporadycznie, ale liczba pacjentów z chorobami rzadkimi jest znaczna"

Dostęp do naszych Usług



Wykaz, klasyfikacje i encyklopedia chorób rzadkich wraz z zaangażowanymi genami



Wykaz leków sierocych



Katalog organizacji pacjentów



Katalog specjalistów i instytucji



Katalog centrów eksperckich



Katalog laboratoriów medycznych oferujących badania diagnostyczne



Katalog projektów badawczych, badań klinicznych, rejestrów i biobanków



Zbiór raportów tematycznych: Orphanet Report Series

Portal dla rzadkich chorób i leków sierocych

COVID-19 & Choroby rzadkie

orphanet



Znajdź zalecenia i usługi oferowane przez ekspertów dotyczące COVID-19 i chorób rzadkich, w tym te, które oferują Europejskie Sieci Referencyjne (European Reference Networks), są one dostępne w wielu różnych językach.



Choroby rzadkie

Wyszukaj

Oznaki i objawy kliniczne

Klasyfikacje

Geny

Niepełnosprawność

Encyklopedia dla pacjentów

Encyklopedia dla specjalistów

Przewodniki postępowania

Źródła / procedury

Strona główna > Choroby rzadkie > Wyszukaj

Wyszukaj chorobę rzadką

TANGO2

Szukaj

(*) pole obowiązkowe

☐ Wyszukaj według nazwy choroby

☐ OMIM

☒ Nazwa lub symbol genów

☐ Kod ORPHA

☐ ICD-10

Inne opcje wyszukiwania ▼

Oznaki i objawy
kliniczne

Klasyfikacje

Geny

Niepełnosprawność

Encyklopedia dla
pacjentówEncyklopedia dla
specjalistówPrzewodniki
postępowania

Źródła / procedury

Wyszukaj chorobę rzadką

TANGO2

Szukaj

(*) pole obowiązkowe

☐ Wyszukaj według nazwy
choroby☐ OMIM☒ Nazwa lub symbol genów☐ Kod ORPHA☐ ICD-10

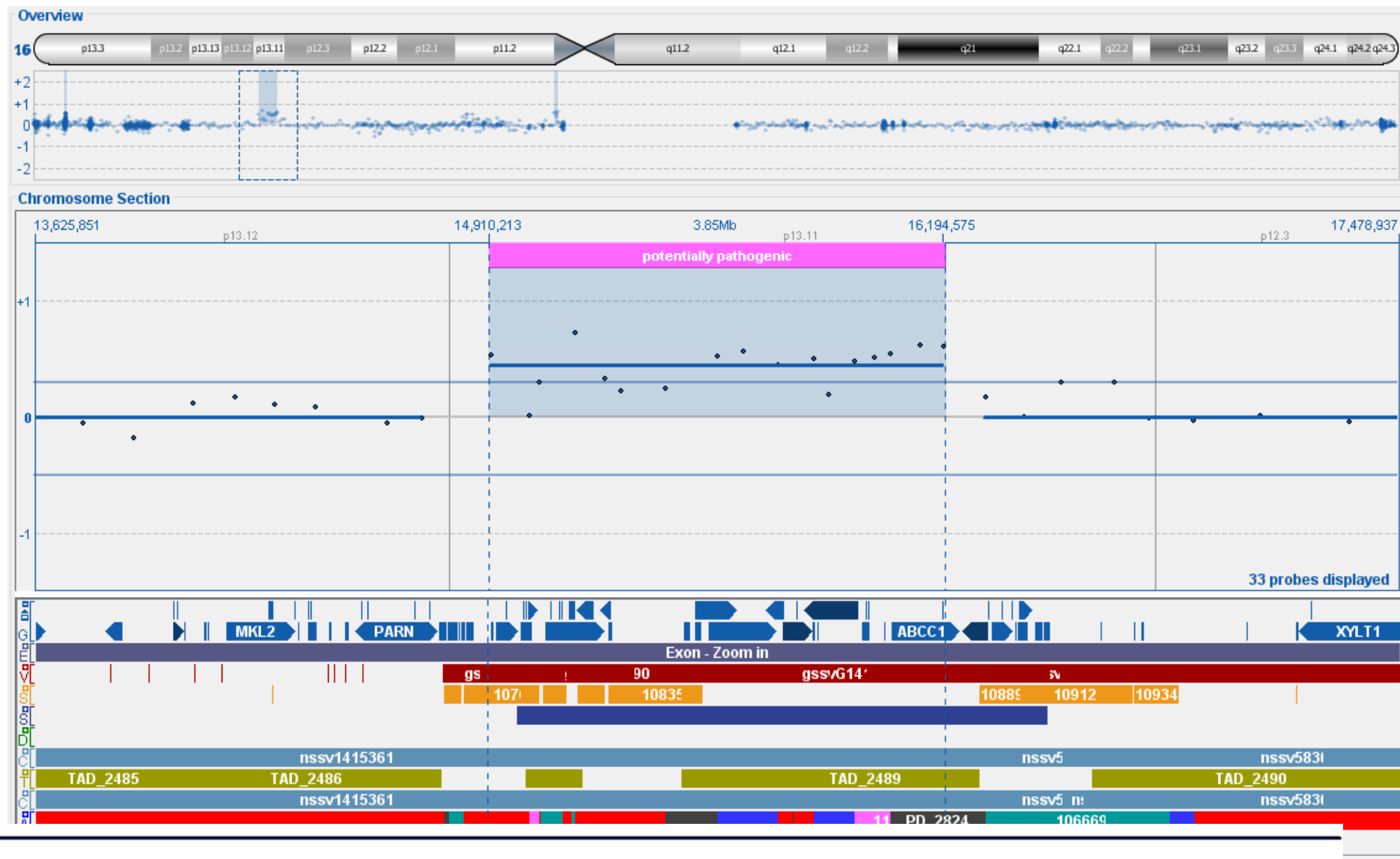
Inne opcje wyszukiwania ▼

1 Wyniki

ORPHA:480864 () [Zespół nawracającego przełomu metabolicznego o charakterze encefalomiopatii, rabdomiolizy, arytmii serca i niepełnosprawności intelektualnej](#)

Więcej informacji

3 – letni chłopiec. Wskazania: zespół wad wrodzonych, hipotrofia, niska odporność
arr[hg19] 16p13.11(14,910,213-16,194,575)x3 1.6Mb – region o niepełnej penetracji

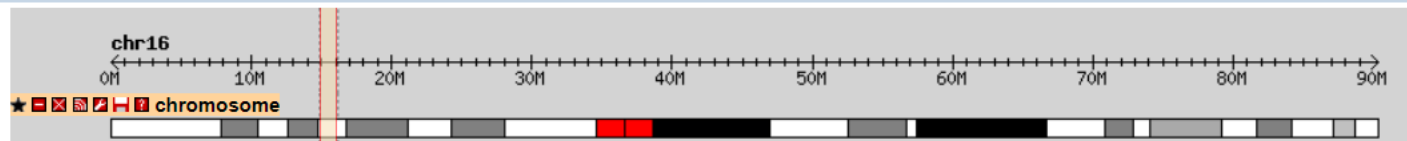


Filter variants

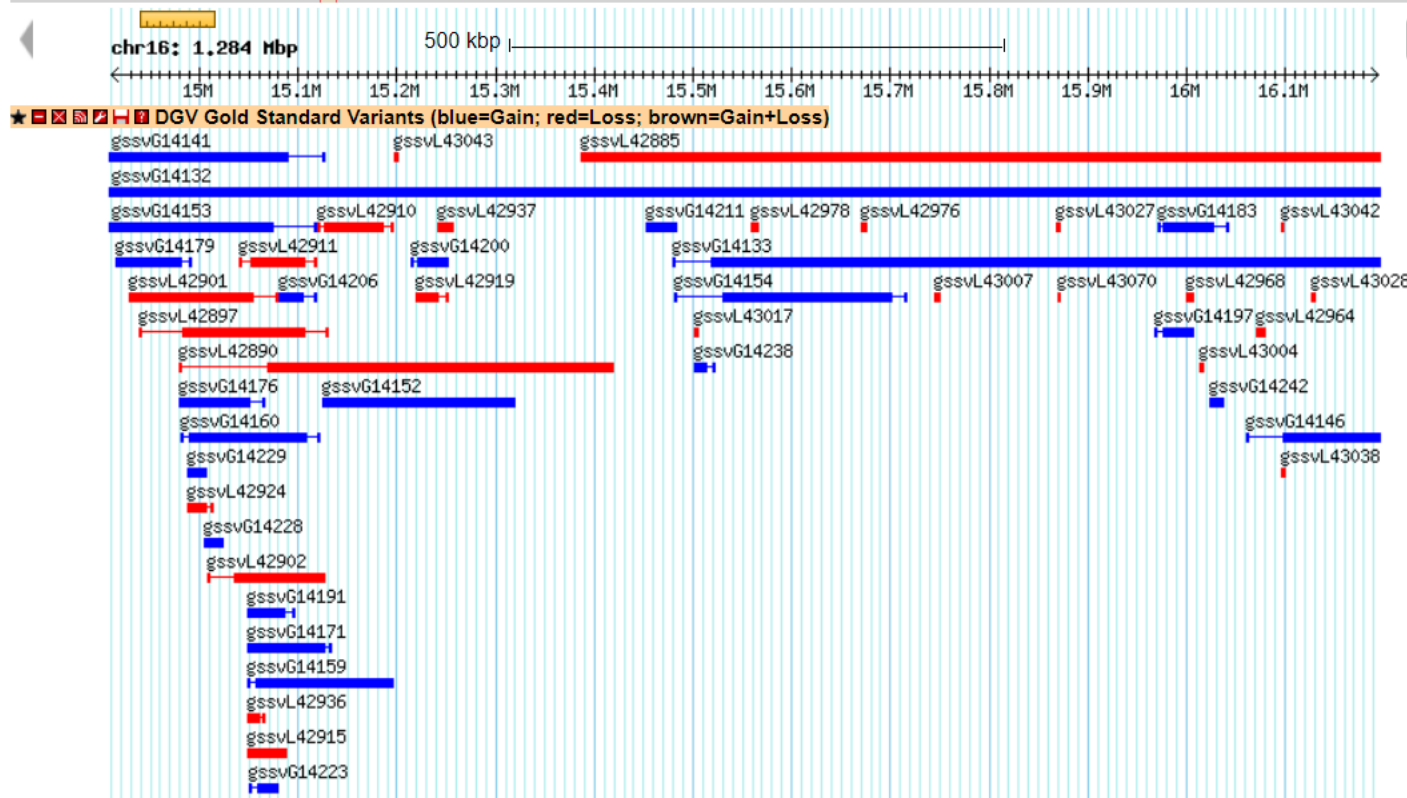
study ▾ = ▾ + -

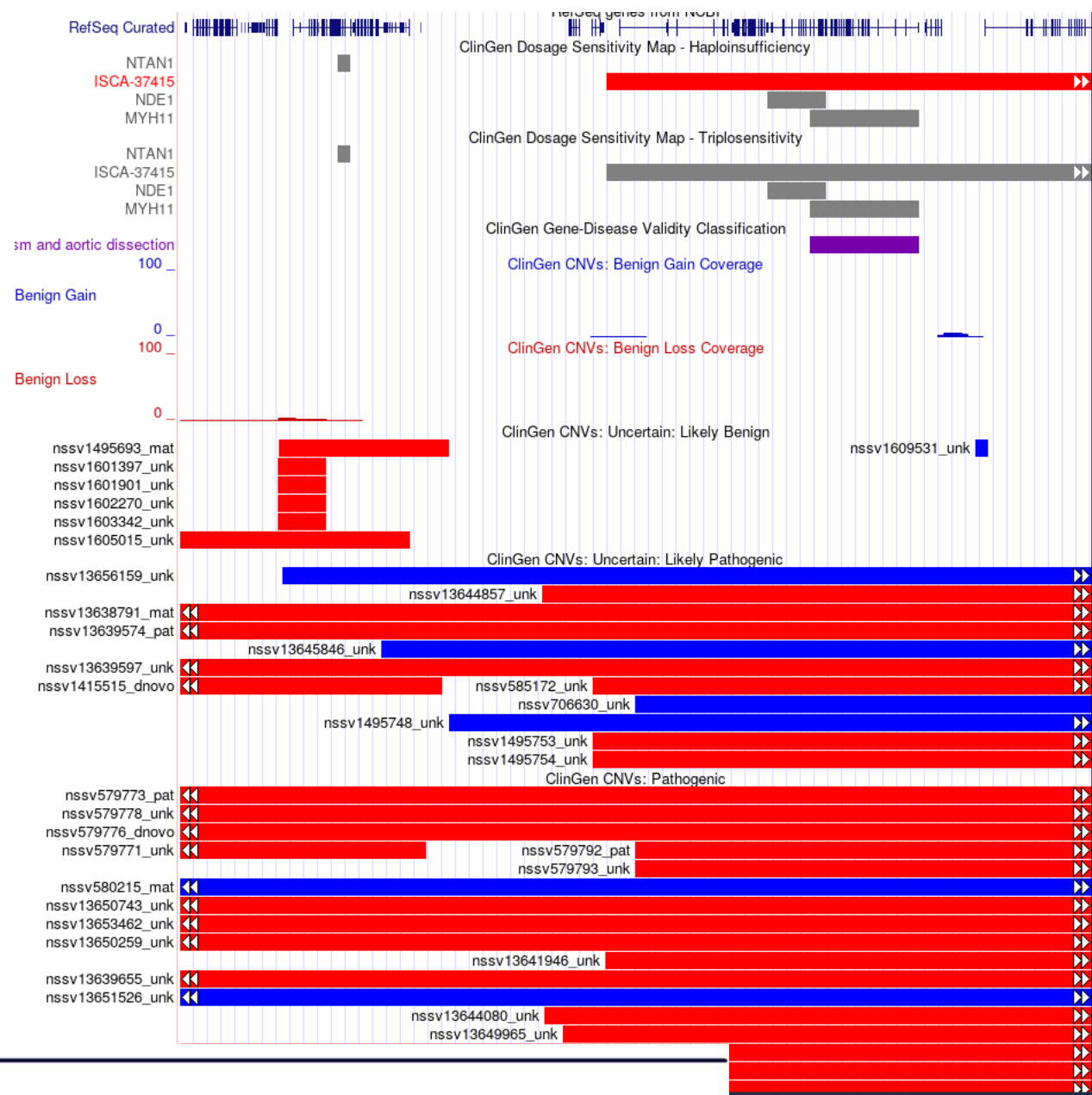
Filter Reset

Przegląd



Szczegóły





Dziękuję za uwagę

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