

Supplementary Materials

Intrinsic Disorder in Tetratricopeptide Repeat Proteins

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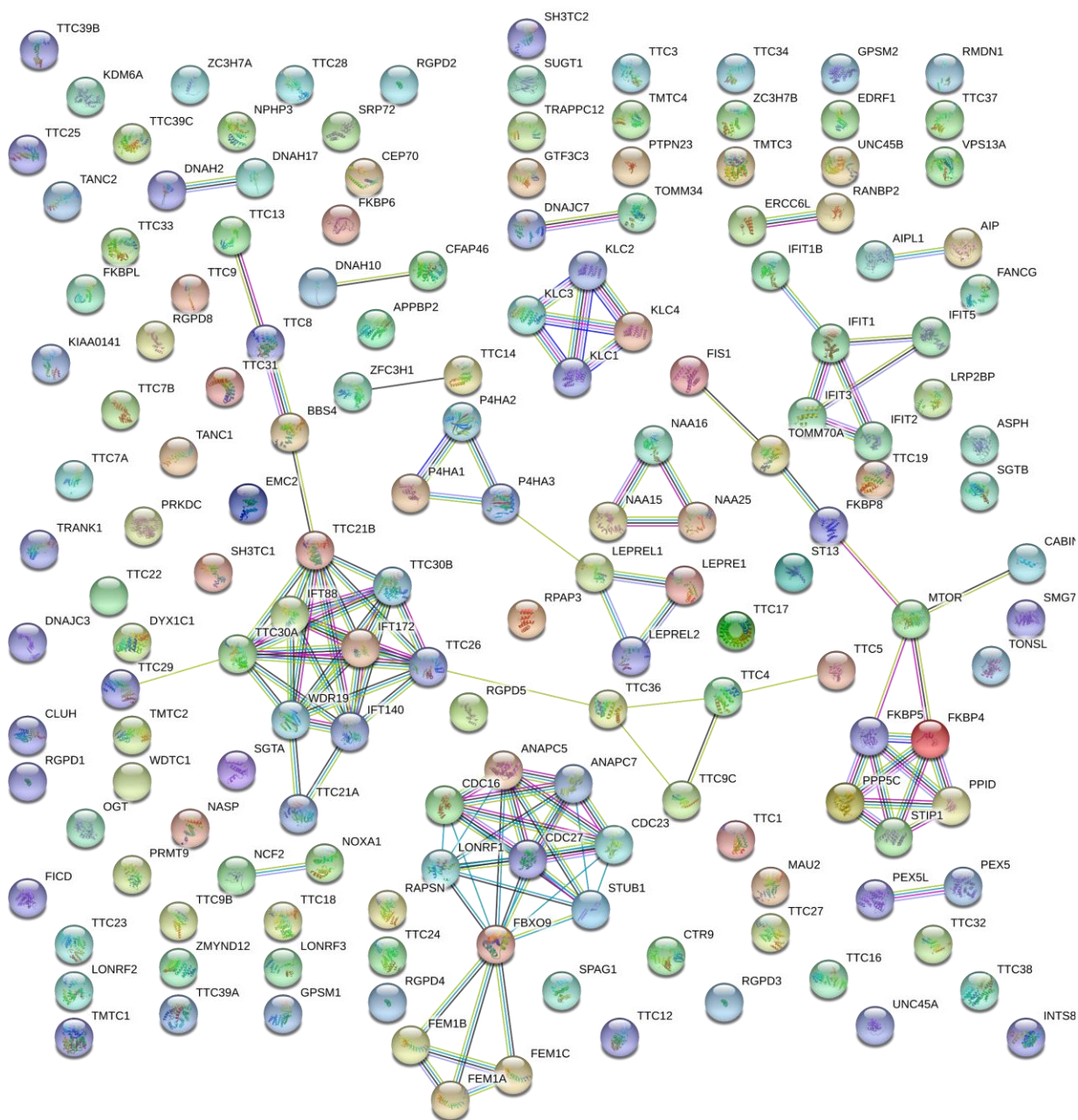
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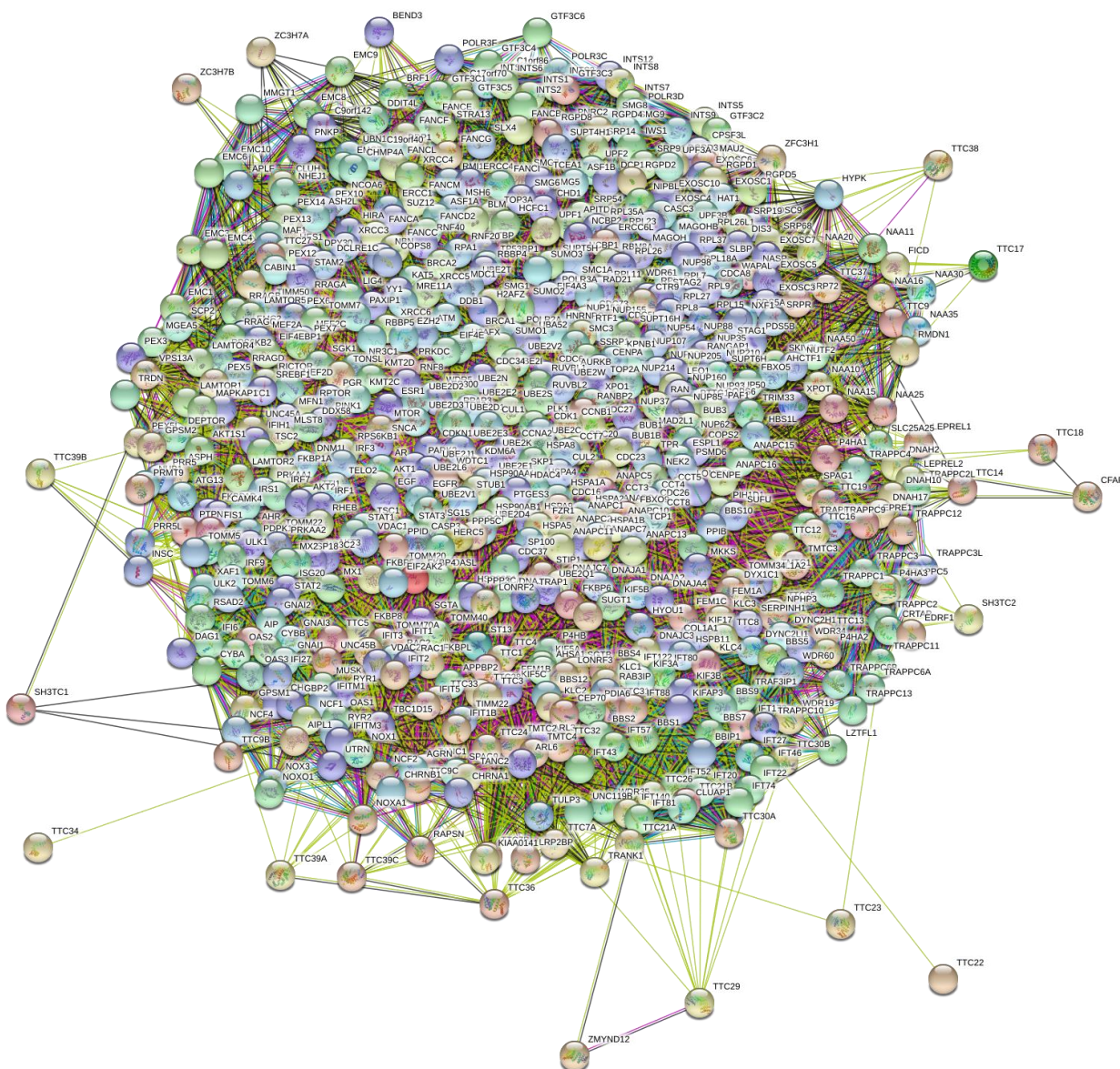
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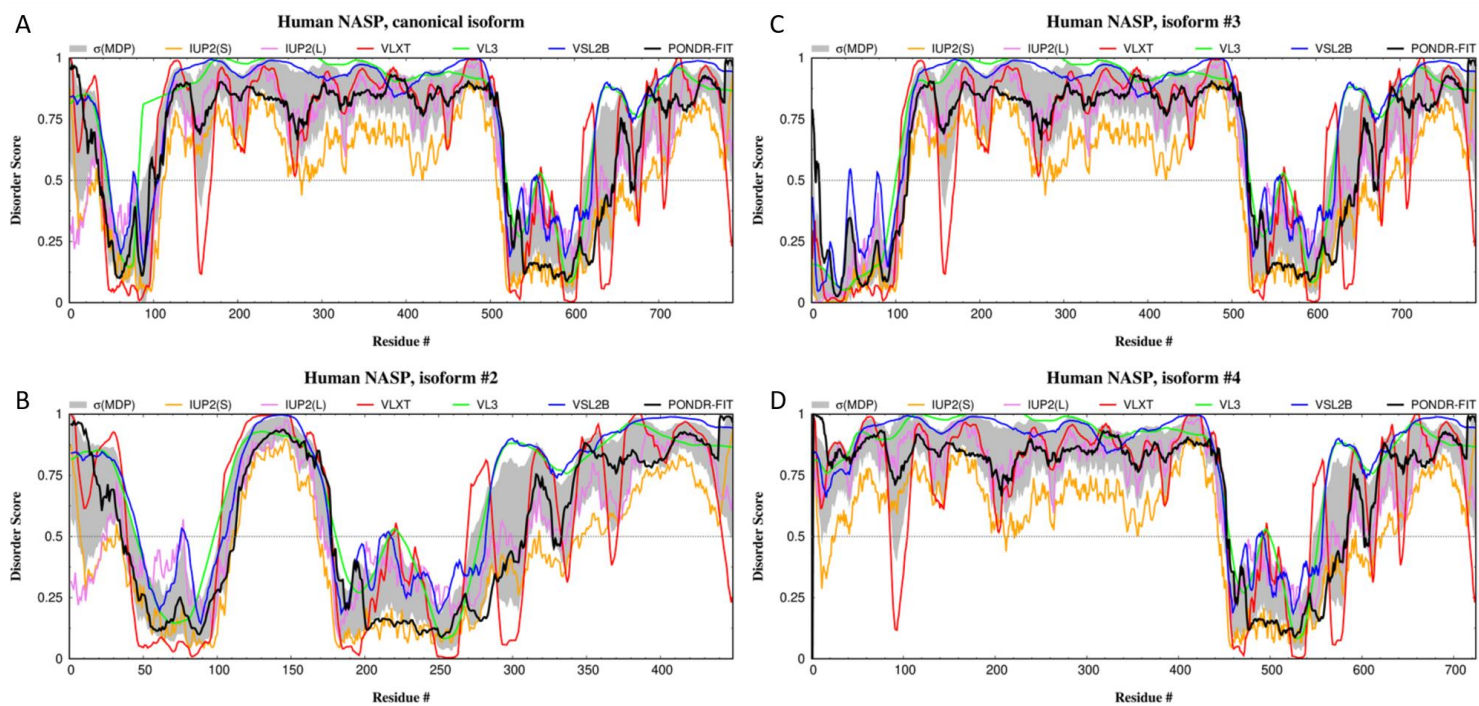
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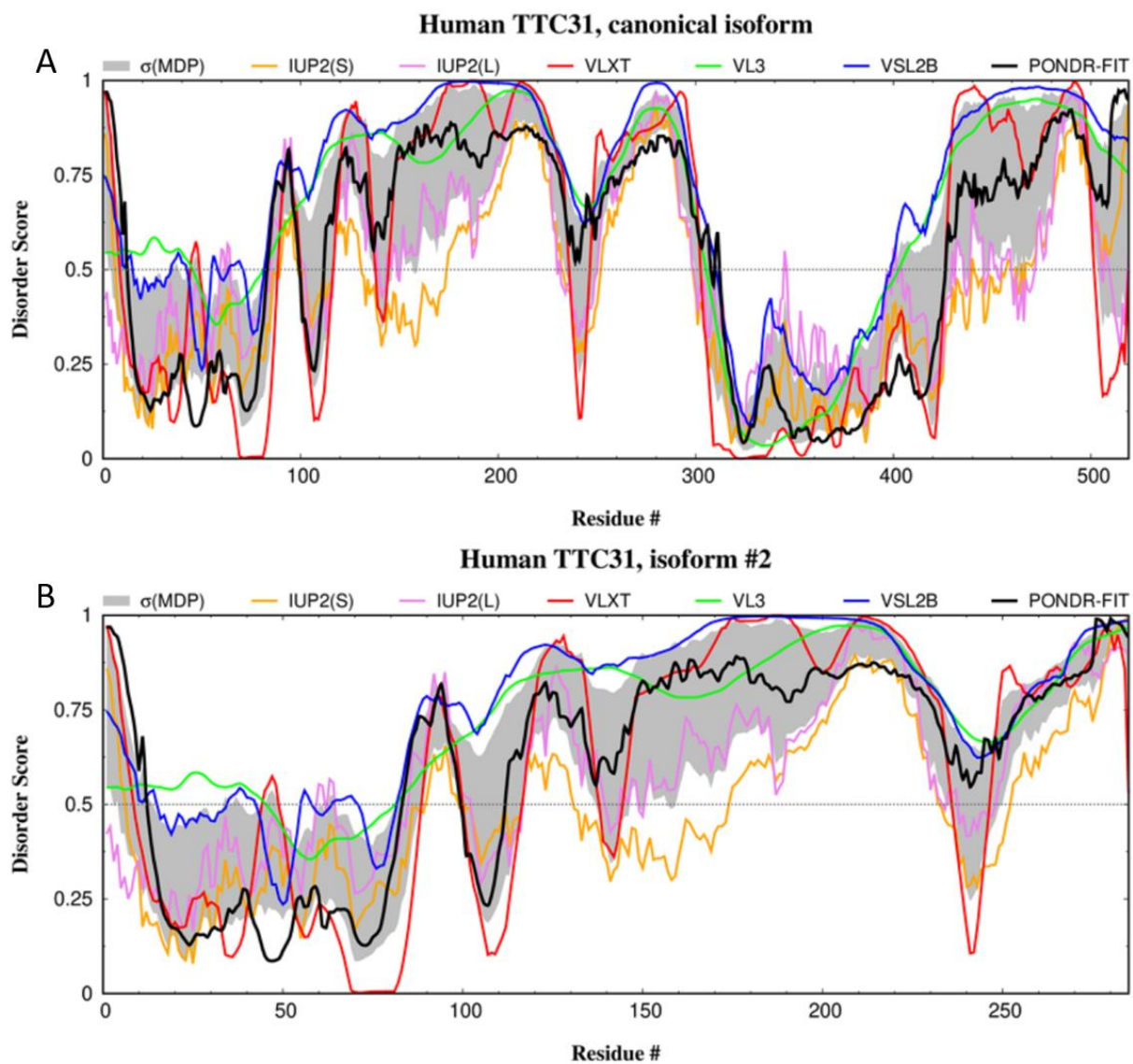
Supplementary Figure S2. STRING-generated TPR internal PPI network generated with high confidence of 0.7.



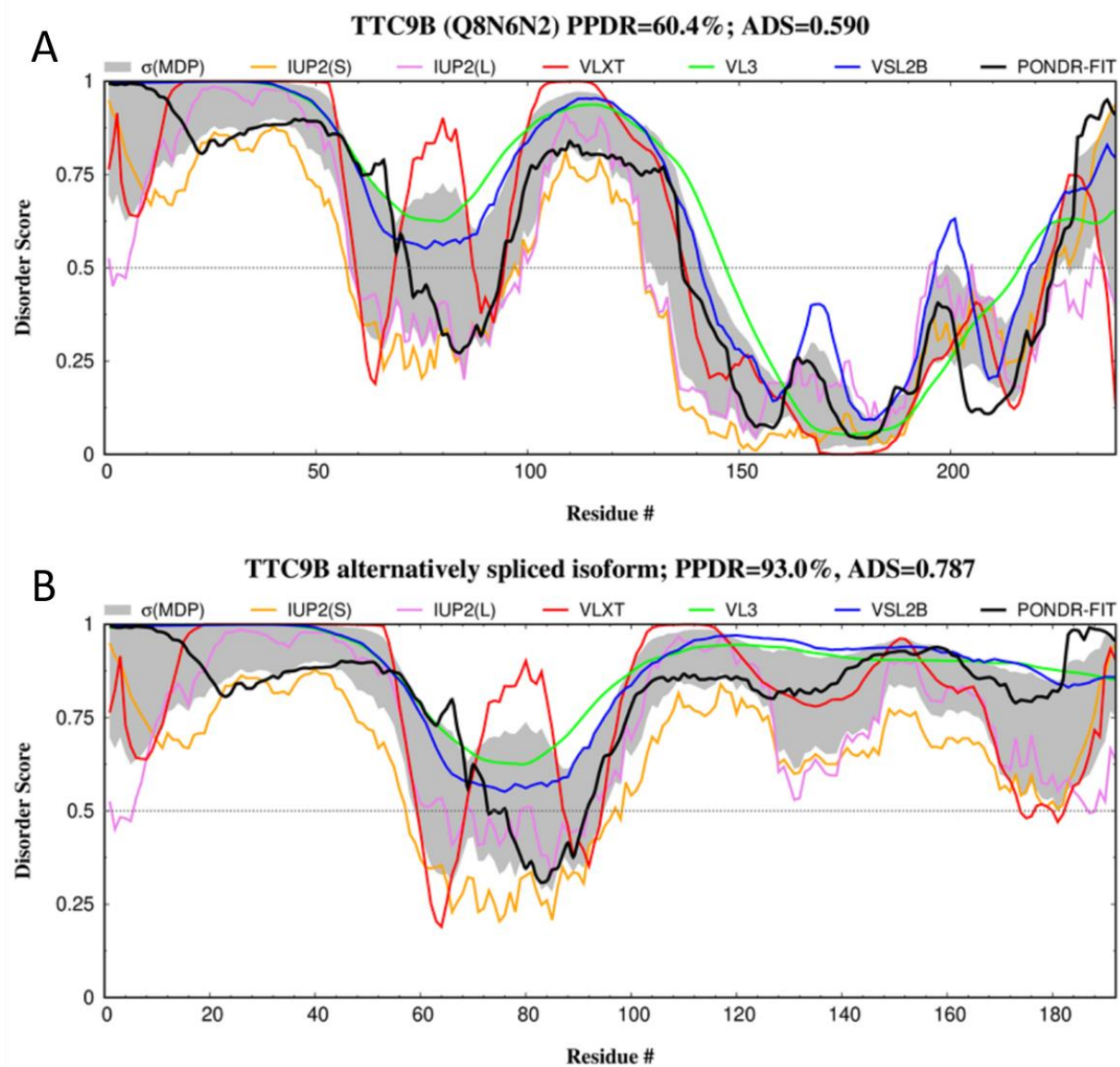
Supplementary Figure S3. STRING-generated PPI network of 161 human TPR proteins with included first shell interactors using the low confidence level of 0.15. This dense network of 661 proteins connected by 35,582 interactions with the average node degree of 108, average local clustering coefficient of 0.464, expected number of edges of 23,094, and PPI enrichment p-value of $< 10^{-16}$



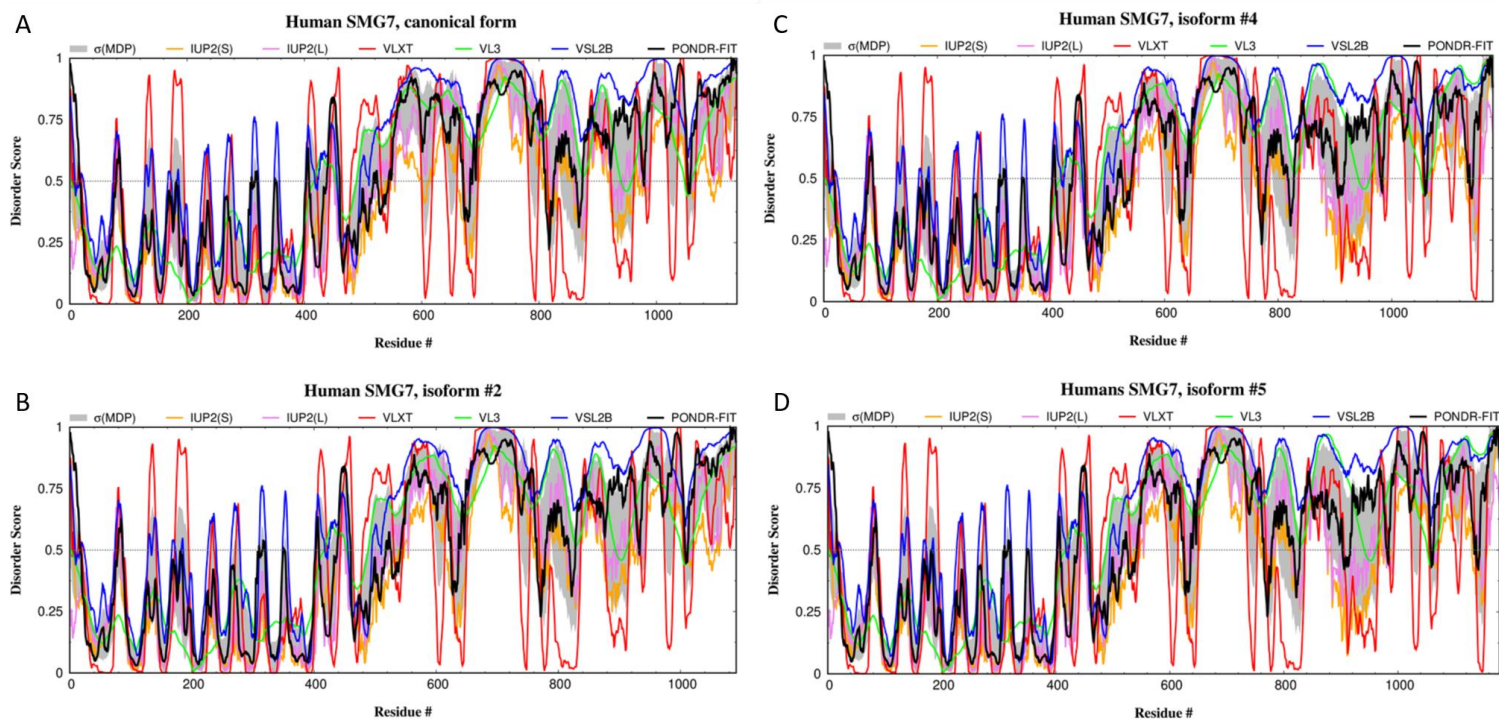
Supplementary Figure S4. Intrinsic disorder analysis of alternatively spliced isoforms of human NASP.



Supplementary Figure S5. Intrinsic disorder analysis of alternatively spliced isoforms of human TTC31.



Supplementary Figure S6. Intrinsic disorder analysis of alternatively spliced isoforms of human TTC9B.



Supplementary Figure S7. Intrinsic disorder analysis of alternatively spliced isoforms of human SNG7.

Supplementary Materials. 166 human TPR proteins analyzed in this study, their intrinsic disorder propensity, presence of experimentally validated structural information and relation to various human diseases.

UniProt		PONDRA-FIT						VSL2		Cross-reference (PDB)	Structure (PDB) available?	Involvement		Mutations	
ID	Protein name	Entry name	Length	(% Disordered)	PONDRA-FIT (avg.)	VLXT.Overall percent disordered	VLXT.Average Prediction Score	percent disordered	Prediction Score			in disease	Diseases?	Mutagenesis	recorded?
O00170	AIP	AIP_HUMAN	330	0.1273	0.2426	0.2303	0.2842	0.2545	0.3751	2LKN;4AIF;4A	TRUE	DISEASE: Pituit	TRUE		FALSE
Q9NZN9	AIPL1	AIPL1_HUMAN	384	0.2578	0.3217	0.2839	0.3570	0.3307	0.4524	5U9A;5U9I;5L	TRUE	DISEASE: Leber	TRUE	MUTAGEN 53 53	TRUE
Q6P2P2	ANM9	ANM9_HUMAN	845	0.0734	0.2053	0.1858	0.2404	0.1680	0.3102	6PDM;	TRUE		FALSE	MUTAGEN 182 1	TRUE
Q92624	APBP2	APBP2_HUMAN	585	0.0342	0.1566	0.0786	0.1379	0.1231	0.2934		FALSE		FALSE		FALSE
Q9UJX4	APC5	APC5_HUMAN	755	0.1325	0.2152	0.1642	0.2186	0.2026	0.3523	4UI9;5A31;5C	TRUE		FALSE		FALSE
Q9UJX3	APC7	APC7_HUMAN	599	0.1619	0.2684	0.2137	0.3111	0.2421	0.3920	3FFL;4UI9;5A	TRUE		FALSE	MUTAGEN 56 56	TRUE
Q12797	ASPH	ASPH_HUMAN	758	0.4393	0.4592	0.5145	0.4870	0.5343	0.5742	5APA;5JQY;5J	TRUE	DISEASE: Facia	TRUE	MUTAGEN 91 93	TRUE
Q96RK4	BBS4	BBS4_HUMAN	519	0.2062	0.2899	0.2389	0.2451	0.3256	0.4051		FALSE	DISEASE: Bardet	TRUE		FALSE
Q9Y6J0	CABIN	CABIN_HUMAN	2220	0.3851	0.4198	0.4851	0.4617	0.5266	0.5592	1N6J;	TRUE		FALSE	MUTAGEN 2172	TRUE
Q13042	CDC16	CDC16_HUMAN	620	0.1113	0.2198	0.1823	0.2161	0.2403	0.3634	3HYM;4UI9;5	TRUE		FALSE		FALSE
Q9UJX2	CDC23	CDC23_HUMAN	597	0.0536	0.1941	0.1608	0.2064	0.2278	0.3230	4UI9;5A31;5C	TRUE		FALSE	MUTAGEN 339 3	TRUE
P30260	CDC27	CDC27_HUMAN	824	0.3726	0.3765	0.3422	0.3433	0.4551	0.4969	3T1N;4RG6;4I	TRUE		FALSE	MUTAGEN 821 8	TRUE
Q8NHQ1	CEP70	CEP70_HUMAN	597	0.4188	0.4050	0.3920	0.3826	0.5008	0.5433		FALSE		FALSE		FALSE
Q8IYW2	CFA46	CFA46_HUMAN	2715	0.1882	0.2891	0.3506	0.3689	0.3650	0.4343		FALSE		FALSE		FALSE
Q5T0N1	CFA70	CFA70_HUMAN	1121	0.1454	0.2575	0.2596	0.2979	0.3426	0.4073		FALSE		FALSE		FALSE
Q9UNE7	CHIP	CHIP_HUMAN	303	0.3432	0.3806	0.4686	0.5032	0.4191	0.5161	4KBQ;	TRUE	DISEASE: Spinc	TRUE	MUTAGEN 30 30	TRUE
O75153	CLU	CLU_HUMAN	1309	0.1551	0.2635	0.3231	0.3401	0.2743	0.4081		FALSE		FALSE		FALSE
Q6PD62	CTR9	CTR9_HUMAN	1173	0.3316	0.3810	0.3649	0.3808	0.3777	0.5080	5ZYQ;6GMH;	TRUE		FALSE		FALSE
Q8WXU2	DAAF4	DAAF4_HUMAN	420	0.3214	0.3709	0.4167	0.3967	0.5357	0.5354		FALSE	DISEASE: Dysle	TRUE		FALSE
Q14154	DELE1	DELE1_HUMAN	515	0.3903	0.4311	0.3650	0.3800	0.5981	0.5916		FALSE		FALSE		FALSE
Q13217	DNJC3	DNJC3_HUMAN	504	0.2857	0.3614	0.3373	0.3471	0.4881	0.5121	2Y4T;2Y4U;	TRUE	DISEASE: Ataxi	TRUE		FALSE
Q99615	DNJC7	DNJC7_HUMAN	494	0.2085	0.3071	0.2429	0.2698	0.4757	0.5000		FALSE		FALSE	MUTAGEN 101 1	TRUE
Q8IVF4	DYH10	DYH10_HUMAN	4471	0.0541	0.1779	0.1930	0.2541	0.1682	0.3148		FALSE		FALSE		FALSE
Q9UFH2	DYH17	DYH17_HUMAN	4462	0.0193	0.1592	0.1690	0.2297	0.1544	0.3034		FALSE		FALSE		FALSE
Q9P225	DYH2	DYH2_HUMAN	4427	0.0490	0.1807	0.2254	0.2695	0.1653	0.3150		FALSE		FALSE		FALSE
Q3B7T1	EDRF1	EDRF1_HUMAN	1238	0.1963	0.3047	0.2528	0.3115	0.4063	0.4581		FALSE		FALSE		FALSE
Q15006	EMC2	EMC2_HUMAN	297	0.1852	0.2884	0.2896	0.3266	0.2929	0.4055		FALSE		FALSE		FALSE
Q2NKX8	ERC6L	ERC6L_HUMAN	1250	0.3280	0.3785	0.3472	0.3833	0.5128	0.5311	5JNO;	TRUE		FALSE	MUTAGEN 11 11	TRUE
P50502	F10A1	F10A1_HUMAN	369	0.6125	0.5783	0.5257	0.5711	0.7344	0.6983	1UZS;	TRUE		FALSE		FALSE
Q8NFI4	F10A5	F10A5_HUMAN	369	0.5962	0.5527	0.4959	0.5417	0.6992	0.6742		FALSE		FALSE		FALSE
O15287	FANCG	FANCG_HUMAN	622	0.0756	0.2475	0.3023	0.3418	0.3505	0.4095		FALSE	DISEASE: Fancu	TRUE	MUTAGEN 7 7 S	TRUE
Q9UK97	FBX9	FBX9_HUMAN	447	0.2416	0.3089	0.2260	0.2866	0.3445	0.4024		FALSE		FALSE		FALSE
Q9BSK4	FEM1A	FEM1A_HUMAN	669	0.1390	0.2714	0.3169	0.3612	0.2571	0.3932		FALSE		FALSE		FALSE
Q9UK73	FEM1B	FEM1B_HUMAN	627	0.0335	0.1724	0.1116	0.1915	0.1388	0.2846		FALSE		FALSE	MUTAGEN 342 3	TRUE
Q96JP0	FEM1C	FEM1C_HUMAN	617	0.0567	0.1987	0.1410	0.2170	0.1750	0.3250		FALSE		FALSE		FALSE
Q9BVA6	FICD	FICD_HUMAN	458	0.1070	0.2219	0.2817	0.3413	0.2489	0.3474	4U04;4U07;4I	TRUE		FALSE	MUTAGEN 76 77	TRUE
Q9Y3D6	FIS1	FIS1_HUMAN	152	0.1908	0.3315	0.2895	0.2993	0.3224	0.4121	1NZN;1PC2;	TRUE		FALSE	MUTAGEN 14 14	TRUE
Q02790	FKBP4	FKBP4_HUMAN	459	0.1808	0.3324	0.4009	0.3885	0.4183	0.5026	1N1A;1P5Q;1	TRUE		FALSE	MUTAGEN 67 68	TRUE
Q13451	FKBP5	FKBP5_HUMAN	457	0.2626	0.3295	0.3195	0.3433	0.4661	0.4993	1KT0;3O5D;3I	TRUE		FALSE		FALSE
O75344	FKBP6	FKBP6_HUMAN	327	0.0979	0.2107	0.1835	0.2821	0.1407	0.3246	3B7X;	TRUE	DISEASE: Note	TRUE		FALSE
Q14318	FKBP8	FKBP8_HUMAN	412	0.3058	0.3832	0.4903	0.5052	0.3981	0.4990	2AWG;2D9F;2	TRUE		FALSE	MUTAGEN 149 1	TRUE
Q9UIM3	FKBPL	FKBPL_HUMAN	349	0.3868	0.4487	0.5501	0.5045	0.6791	0.6219		FALSE		FALSE	MUTAGEN 287 2	TRUE
Q86YR5	GPSM1	GPSM1_HUMAN	675	0.4119	0.4193	0.3837	0.4076	0.5156	0.5539		FALSE		FALSE		FALSE

P81274	GPSM2	GPSM2_HUMAN	684	0.2939	0.3574	0.2982	0.3391	0.5000	0.5001	3SF4;4WND;4	TRUE	DISEASE: Chud	TRUE	MUTAGEN 228 2	TRUE
Q96RY7	IF140	IF140_HUMAN	1462	0.0684	0.2160	0.2298	0.2785	0.2346	0.3654		FALSE	DISEASE: Short	TRUE		FALSE
Q9UG01	IF172	IF172_HUMAN	1749	0.0212	0.1668	0.1687	0.2450	0.1366	0.3092		FALSE	DISEASE: Short	TRUE		FALSE
P09914	IFIT1	IFIT1_HUMAN	478	0.1611	0.2633	0.2343	0.2845	0.2113	0.3684	4HOU;5UDI;5	TRUE		FALSE	MUTAGEN 34 34	TRUE
P09913	IFIT2	IFIT2_HUMAN	472	0.2267	0.3019	0.3199	0.3260	0.4089	0.4622	4G1T;	TRUE		FALSE	MUTAGEN 184 1	TRUE
O14879	IFIT3	IFIT3_HUMAN	490	0.1347	0.2862	0.2694	0.3104	0.3980	0.4608	6C6K;	TRUE		FALSE		FALSE
Q13325	IFIT5	IFIT5_HUMAN	482	0.0436	0.2099	0.1390	0.2163	0.2220	0.3608	3ZGQ;4HOQ;4	TRUE		FALSE	MUTAGEN 33 33	TRUE
Q5T764	IFT1B	IFT1B_HUMAN	474	0.0527	0.2036	0.0907	0.2058	0.2384	0.3466		FALSE		FALSE		FALSE
A0AVF1	IFT56	IFT56_HUMAN	554	0.1029	0.2201	0.1733	0.2216	0.1913	0.3113		FALSE		FALSE		FALSE
Q13099	IFT88	IFT88_HUMAN	833	0.2449	0.3206	0.3181	0.3559	0.3878	0.4520		FALSE		FALSE		FALSE
Q75QN2	INT8	INT8_HUMAN	995	0.0864	0.2077	0.2161	0.2709	0.2221	0.3223		FALSE		FALSE		FALSE
O15550	KDM6A	KDM6A_HUMAN	1401	0.3961	0.4124	0.3526	0.3714	0.5139	0.5196	3AVR;3AVS;6I	TRUE	DISEASE: Kabu	TRUE	MUTAGEN 1146	TRUE
Q07866	KLC1	KLC1_HUMAN	573	0.4258	0.4194	0.4206	0.4212	0.6038	0.5845	3NF1;5OJ8;	TRUE		FALSE	MUTAGEN 521 5	TRUE
Q9H0B6	KLC2	KLC2_HUMAN	622	0.4148	0.4686	0.5997	0.5521	0.5804	0.6000	3CEQ;3EDT;	TRUE	DISEASE: Spast	TRUE		FALSE
Q6P597	KLC3	KLC3_HUMAN	504	0.4425	0.4743	0.6171	0.5539	0.6567	0.6138		FALSE		FALSE		FALSE
Q9NSK0	KLC4	KLC4_HUMAN	619	0.4701	0.4755	0.6252	0.5614	0.6220	0.6082		FALSE		FALSE		FALSE
Q17RB8	LONF1	LONF1_HUMAN	773	0.1966	0.2944	0.2678	0.3098	0.3816	0.4472		FALSE		FALSE		FALSE
Q1L5Z9	LONF2	LONF2_HUMAN	754	0.3382	0.3855	0.3501	0.3930	0.5265	0.5533		FALSE		FALSE		FALSE
Q496Y0	LONF3	LONF3_HUMAN	759	0.3478	0.3930	0.3860	0.4118	0.4980	0.5335		FALSE		FALSE		FALSE
Q9P2M1	LR2BP	LR2BP_HUMAN	347	0.0749	0.1860	0.1153	0.1674	0.1470	0.3267		FALSE		FALSE		FALSE
P42345	MTOR	MTOR_HUMAN	2549	0.0891	0.2116	0.2523	0.2981	0.1962	0.3296	1AUE;1FAP;1I	TRUE	DISEASE: Smitt	TRUE	MUTAGEN 2159	TRUE
Q9BXJ9	NAA15	NAA15_HUMAN	866	0.1201	0.2110	0.1998	0.2518	0.2009	0.3723	6C95;6C9M;	TRUE	DISEASE: Men1	TRUE		FALSE
Q6N069	NAA16	NAA16_HUMAN	864	0.1088	0.2004	0.1806	0.2366	0.1898	0.3721		FALSE		FALSE		FALSE
Q14CX7	NAA25	NAA25_HUMAN	972	0.0823	0.2260	0.2541	0.2781	0.3200	0.3818		FALSE		FALSE		FALSE
P49321	NASP	NASP_HUMAN	788	0.7487	0.6750	0.7322	0.6654	0.8020	0.7929		FALSE		FALSE		FALSE
P19878	NCF2	NCF2_HUMAN	526	0.2357	0.3235	0.3270	0.3368	0.4468	0.4567	1E96;1HH8;1I	TRUE	DISEASE: Gran	TRUE		FALSE
Q86UR1	NOXA1	NOXA1_HUMAN	476	0.2689	0.3410	0.3782	0.3808	0.4160	0.4636		FALSE		FALSE	MUTAGEN 34 34	TRUE
Q7Z494	NPHP3	NPHP3_HUMAN	1330	0.1368	0.2527	0.2812	0.3148	0.3789	0.4151	5L7K;	TRUE	DISEASE: Neph	TRUE		FALSE
O15294	OGT1	OGT1_HUMAN	1046	0.0459	0.1726	0.1606	0.2190	0.1205	0.2957	1W3B;3PE3;3	TRUE	DISEASE: Note	TRUE	MUTAGEN 208 2	TRUE
Q32P28	P3H1	P3H1_HUMAN	736	0.1685	0.2784	0.3220	0.3528	0.3641	0.4177		FALSE	DISEASE: Osteo	TRUE		FALSE
Q8IVL5	P3H2	P3H2_HUMAN	708	0.1695	0.2603	0.3051	0.3391	0.3404	0.4303		FALSE	DISEASE: Myo	TRUE		FALSE
Q8IVL6	P3H3	P3H3_HUMAN	736	0.2473	0.3618	0.4049	0.4418	0.4891	0.5419		FALSE		FALSE		FALSE
P13674	P4HA1	P4HA1_HUMAN	534	0.0805	0.2106	0.2154	0.2681	0.2041	0.3630	1TJC;2V5F;2Y	TRUE		FALSE	MUTAGEN 210 2	TRUE
O15460	P4HA2	P4HA2_HUMAN	535	0.0523	0.2058	0.1963	0.2764	0.2131	0.3514	6EVL;6EVM;6	TRUE	DISEASE: Myo	TRUE		FALSE
Q7Z4N8	P4HA3	P4HA3_HUMAN	544	0.0551	0.1999	0.1728	0.2507	0.1967	0.3317		FALSE		FALSE		FALSE
P50542	PEX5	PEX5_HUMAN	639	0.1408	0.2863	0.3302	0.3722	0.4163	0.4546	1FCH;2COL;2C	TRUE	DISEASE: Pero	TRUE	MUTAGEN 118 1	TRUE
Q8IYB4	PEX5R	PEX5R_HUMAN	626	0.4329	0.4433	0.5128	0.4836	0.5815	0.5577		FALSE		FALSE		FALSE
Q08752	PPID	PPID_HUMAN	370	0.1486	0.2768	0.1486	0.2396	0.3541	0.4386		FALSE		FALSE	MUTAGEN 227 2	TRUE
P53041	PPP5	PPP5_HUMAN	499	0.0882	0.2153	0.1824	0.2470	0.2725	0.3836	1A17;1S95;1V	TRUE		FALSE	MUTAGEN 32 32	TRUE
P78527	PRKDC	PRKDC_HUMAN	4128	0.0964	0.2064	0.1860	0.2422	0.2202	0.3470	5LUQ;5W1R;5	TRUE	DISEASE: Immu	TRUE	MUTAGEN 1510	TRUE
Q9H3S7	PTN23	PTN23_HUMAN	1636	0.4034	0.4429	0.4927	0.5187	0.5770	0.6027	3RAU;5CRU;5	TRUE		FALSE	MUTAGEN 202 2	TRUE
Q13702	RAPSN	RAPSN_HUMAN	412	0.0874	0.1957	0.1505	0.2457	0.1262	0.3408		FALSE	DISEASE: Myas	TRUE		FALSE
P49792	RBP2	RBP2_HUMAN	3224	0.3294	0.3779	0.2847	0.3204	0.6104	0.5694	1RRP;1XKE;1Z	TRUE	DISEASE: Ence	TRUE	MUTAGEN 2632	TRUE
P0DJD0	RGPD1	RGPD1_HUMAN	1748	0.2923	0.3471	0.3129	0.3443	0.5097	0.5220		FALSE		FALSE		FALSE
P0DJD1	RGPD2	RGPD2_HUMAN	1756	0.2995	0.3496	0.3195	0.3464	0.5188	0.5256		FALSE		FALSE		FALSE
A6NKT7	RGPD3	RGPD3_HUMAN	1758	0.2782	0.3399	0.2958	0.3300	0.5057	0.5180		FALSE		FALSE		FALSE
Q7Z3J3	RGPD4	RGPD4_HUMAN	1758	0.3015	0.3561	0.3134	0.3422	0.5171	0.5320		FALSE		FALSE		FALSE

Q99666	RGPD5	RGPD5_HUMAN	1765	0.2737	0.3414	0.3286	0.3495	0.5071	0.5126	4CGV;4CGW;4CGX;4CGY;4CGZ;4CGAA;4CGAB;4CGAC;4CGAD;4CGAE;4CGAF;4CGAG;4CGAH;4CGAI;4CGAJ;4CGAK;4CGAL;4CGAM;4CGAN;4CGAO;4CGAP;4CGAQ;4CGAR;4CGAS;4CGAT;4CGAU;4CGAV;4CGAW;4CGAX;4CGAY;4CGAZ;4CGBA;4CGBB;4CGBC;4CGBD;4CGBE;4CGBF;4CGBG;4CGBH;4CGBI;4CGBJ;4CGBK;4CGBL;4CGBM;4CGBN;4CGBO;4CGBP;4CGBQ;4CGBR;4CGBS;4CGBT;4CGBU;4CGBV;4CGBW;4CGBX;4CGBY;4CGBZ;4CGCA;4CGCB;4CGCC;4CGCD;4CGCE;4CGCF;4CGCG;4CGCH;4CGCI;4CGCJ;4CGCK;4CGCL;4CGCM;4CGCN;4CGCO;4CGCP;4CGCQ;4CGCSR;4CGCST;4CGCT;4CGCU;4CGCV;4CGCW;4CGCX;4CGCY;4CGCZ;4CGDA;4CGDB;4CGDC;4CGDD;4CGDE;4CGDF;4CGDG;4CGDH;4CGDI;4CGDJ;4CGDK;4CGDL;4CGDM;4CGDN;4CGDO;4CGDP;4CGDQ;4CGDS;4CGDT;4CGDU;4CGDV;4CGDW;4CGDX;4CGDY;4CGDZ;4CGEA;4CGEB;4CGEC;4CGED;4CGEE;4CGEF;4CGEG;4CGEH;4CGEI;4CGEJ;4CGEK;4CGEL;4CGEM;4CGEN;4CGEO;4CGEP;4CGEQ;4CGES;4CGET;4CGEU;4CGEV;4CGEW;4CGEX;4CGEY;4CGEZ;4CGFA;4CGFB;4CGFC;4CGFD;4CGFE;4CGFF;4CGFG;4CGFH;4CGFI;4CGFJ;4CGFK;4CGFL;4CGFM;4CGFN;4CGFO;4CGFP;4CGFQ;4CGFS;4CGFT;4CGFU;4CGFV;4CGFW;4CGFX;4CGFY;4CGFZ;4CGGA;4CGGB;4CGGC;4CGGD;4CGGE;4CGGF;4CGGG;4CGGH;4CGGI;4CGGJ;4CGGK;4CGGL;4CGGM;4CGGN;4CGGO;4CGGP;4CGGQ;4CGGSR;4CGGST;4CGGT;4CGGU;4CGGV;4CGGW;4CGGX;4CGGY;4CGGZ;4CGHA;4CGHB;4CGHC;4CGHD;4CGHE;4CGHF;4CGHG;4CGHH;4CGHI;4CGHJ;4CGHK;4CGHL;4CGHM;4CGHN;4CGHO;4CGHP;4CGHQ;4CGHS;4CGHT;4CGHU;4CGHV;4CGHW;4CGHX;4CGHY;4CGHZ;4CGIA;4CGIB;4CGIC;4CGID;4CGIE;4CGIF;4CGIG;4CGIH;4CGII;4CGIJ;4CGIK;4CGIL;4CGIM;4CGIN;4CGIO;4CGIP;4CGIQ;4CGISR;4CGIST;4CGIT;4CGIU;4CGIV;4CGIW;4CGIX;4CGIY;4CGIZ;4CGJA;4CGJB;4CGJC;4CGJD;4CGJE;4CGJF;4CGJG;4CGJH;4CGJI;4CGJJ;4CGJK;4CGJL;4CGJM;4CGJN;4CGJO;4CGJP;4CGJQ;4CGJS;4CGJT;4CGJU;4CGJV;4CGJW;4CGJX;4CGJY;4CGJZ;4CGKA;4CGKB;4CGKC;4CGKD;4CGKE;4CGKF;4CGKG;4CGKH;4CGKI;4CGKJ;4CGKK;4CGKL;4CGKM;4CGKN;4CGKO;4CGKP;4CGKQ;4CGKSR;4CGKST;4CGKT;4CGKU;4CGKV;4CGKW;4CGKX;4CGKY;4CGKZ;4CGLA;4CGLB;4CGLC;4CGLD;4CGLE;4CGLF;4CGLG;4CGLH;4CGLI;4CGLJ;4CGLK;4CGLL;4CGLM;4CGLN;4CGLO;4CGLP;4CGLQ;4CGLS;4CGLT;4CGLU;4CGLV;4CGLW;4CGLX;4CGLY;4CGLZ;4CGMA;4CGMB;4CGMC;4CGMD;4CGME;4CGMF;4CGMG;4CGMH;4CGMI;4CGMJ;4CGMK;4CGML;4CGMN;4CGMO;4CGMP;4CGMQ;4CGMS;4CGMT;4CGMU;4CGMV;4CGMW;4CGMX;4CGMY;4CGMZ;4CGNA;4CGNB;4CGNC;4CGND;4CGNE;4CGNF;4CGNG;4CGNH;4CGNI;4CGNJ;4CGNK;4CGNL;4CGNM;4CGNO;4CGNP;4CGNQ;4CGNS;4CGNT;4CGNU;4CGNV;4CGNW;4CGNX;4CGNY;4CGNZ;4CGOA;4CGOB;4CGOC;4CGOD;4CGOE;4CGOF;4CGOG;4CGOH;4CGOI;4CGOJ;4CGOK;4CGOL;4CGOM;4CGON;4CGOO;4CGOP;4CGOQ;4CGOS;4CGOT;4CGOU;4CGOV;4CGOW;4CGOX;4CGOY;4CGOZ;4CGPA;4CGPB;4CGPC;4CGPD;4CGPE;4CGPF;4CGPG;4CGPH;4CGPI;4CGPJ;4CGPK;4CGPL;4CGPM;4CGPN;4CGPO;4CGPP;4CGPQ;4CGPS;4CGPT;4CGPU;4CGPV;4CGPW;4CGPX;4CGPY;4CGPZ;4CGQA;4CGQB;4CGQC;4CGQD;4CGQE;4CGQF;4CGQG;4CGQH;4CGQI;4CGQJ;4CGQK;4CGQL;4CGQM;4CGQN;4CGQO;4CGQP;4CGQQ;4CGQSR;4CGQST;4CGQT;4CGQU;4CGQV;4CGQW;4CGQX;4CGQY;4CGQZ;4CGRA;4CGRB;4CGRC;4CGRD;4CGRE;4CGRF;4CGRG;4CGRH;4CGRI;4CGRJ;4CGRK;4CGRL;4CGRM;4CGRN;4CGRO;4CGRP;4CGRQ;4CGRS;4CGRT;4CGRU;4CGRV;4CGRW;4CGRX;4CGRY;4CGRZ;4CGSA;4CGSB;4CGSC;4CGSD;4CGSE;4CGSF;4CGSG;4CGSH;4CGSI;4CGSJ;4CGSK;4CGSL;4CGSM;4CGSN;4CGSO;4CGSP;4CGSQ;4CGSS;4CGST;4CGSU;4CGSV;4CGSW;4CGSX;4CGSY;4CGSZ;4CGTA;4CGTB;4CGTC;4CGTD;4CGTE;4CGTF;4CGTG;4CGTH;4CGTI;4CGTJ;4CGTK;4CGTL;4CGTM;4CGTN;4CGTO;4CGTP;4CGTQ;4CGTS;4CGTT;4CGTU;4CGTV;4CGTW;4CGTX;4CGTY;4CGTZ;4CGUA;4CGUB;4CGUC;4CGUD;4CGUE;4CGUF;4CGUG;4CGUH;4CGUI;4CGUJ;4CGUK;4CGUL;4CGUM;4CGUN;4CGUO;4CGUP;4CGUQ;4CGUS;4CGUT;4CGUU;4CGUV;4CGUW;4CGUX;4CGUY;4CGUZ;4CGVA;4CGVB;4CGVC;4CGVD;4CGVE;4CGVF;4CGVG;4CGVH;4CGVI;4CGVJ;4CGVK;4CGVL;4CGVM;4CGVN;4CGVO;4CGVP;4CGVQ;4CGVSR;4CGVST;4CGVT;4CGVU;4CGVV;4CGVW;4CGVX;4CGVY;4CGVZ;4CGWA;4CGWB;4CGWC;4CGWD;4CGWE;4CGWF;4CGWG;4CGWH;4CGWI;4CGWJ;4CGWK;4CGWL;4CGWM;4CGWN;4CGWO;4CGWP;4CGWQ;4CGWS;4CGWT;4CGWU;4CGWV;4CGWW;4CGWX;4CGWY;4CGWZ;4CGXA;4CGXB;4CGXC;4CGXD;4CGXE;4CGXF;4CGXG;4CGXH;4CGXI;4CGXJ;4CGXK;4CGXL;4CGXM;4CGXN;4CGXO;4CGXP;4CGXQ;4CGXS;4CGXT;4CGXU;4CGXV;4CGXW;4CGXX;4CGXY;4CGXZ;4CGYA;4CGYB;4CGYC;4CGYD;4CGYE;4CGYF;4CGYG;4CGYH;4CGYI;4CGYJ;4CGYK;4CGYL;4CGYM;4CGYN;4CGYO;4CGYP;4CGYQ;4CGYS;4CGYT;4CGYU;4CGYV;4CGYW;4CGYX;4CGYY;4CGYZ;4CGZA;4CGZB;4CGZC;4CGZD;4CGZE;4CGZF;4CGZG;4CGZH;4CGZI;4CGZJ;4CGZK;4CGZL;4CGZM;4CGZN;4CGZO;4CGZP;4CGZQ;4CGZSR;4CGZST;4CGZT;4CGZU;4CGZV;4CGZW;4CGZX;4CGZY;4CGZZ;4CGAAA;4CGAAB;4CGAAC;4CGAAD;4CGAAE;4CGAAF;4CGAAG;4CGAAH;4CGAAI;4CGAAJ;4CGAAK;4CGAAL;4CGAAM;4CGAAN;4CGAAO;4CGAAP;4CGAAQ;4CGAAS;4CGAAT;4CGAAU;4CGAAV;4CGAAW;4CGAAX;4CGAAY;4CGAAZ;4CGAAB;4CGA
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Q8NA56	TTC29	TTC29_HUMAN	475	0.1095	0.2326	0.2105	0.2545	0.2611	0.3995	6HFO; 2XVS;	FALSE	DISEASE: Trich	FALSE	MUTAGEN 378 3	FALSE
P53804	TTC3	TTC3_HUMAN	2025	0.2696	0.3289	0.2973	0.3308	0.4425	0.4995		FALSE		FALSE		TRUE
Q49AM3	TTC31	TTC31_HUMAN	519	0.6166	0.5416	0.5125	0.5281	0.7360	0.7026		FALSE		FALSE		FALSE
Q5IOX7	TTC32	TTC32_HUMAN	151	0.2649	0.3376	0.3245	0.3297	0.3377	0.4142		FALSE		FALSE		FALSE
Q6PID6	TTC33	TTC33_HUMAN	262	0.1641	0.3002	0.3435	0.3943	0.5305	0.4805		FALSE		FALSE		FALSE
A8MYJ7	TTC34	TTC34_HUMAN	566	0.1219	0.2737	0.3569	0.3638	0.4488	0.4601		FALSE		FALSE		FALSE
A6NLP5	TTC36	TTC36_HUMAN	189	0.6138	0.5736	0.5556	0.5417	0.8148	0.6640		FALSE		FALSE		FALSE
Q6PGP7	TTC37	TTC37_HUMAN	1564	0.0384	0.1765	0.1522	0.2031	0.1611	0.3230		FALSE		TRUE		FALSE
Q5R3I4	TTC38	TTC38_HUMAN	469	0.0618	0.1877	0.1578	0.1964	0.1365	0.3197		FALSE		FALSE		FALSE
O95801	TTC4	TTC4_HUMAN	387	0.2610	0.3340	0.3385	0.3590	0.4677	0.4841		TRUE		FALSE	MUTAGEN 42 42	TRUE
Q6P2S7	TTC41	TTC41_HUMAN	1318	0.0797	0.1966	0.1305	0.1870	0.2375	0.3561	5DSE;6BQ1; 2DBA; 3ZLI;3ZPO;4U 3I7N; 2D9M;	FALSE	FALSE	MUTAGEN 33 33	FALSE	
Q8N0Z6	TTC5	TTC5_HUMAN	440	0.1591	0.2995	0.2705	0.3309	0.5227	0.4884		TRUE	FALSE		FALSE	
Q86TZ1	TTC6	TTC6_HUMAN	520	0.0500	0.1712	0.0308	0.1105	0.1308	0.2678		FALSE	FALSE		FALSE	
Q9ULT0	TTC7A	TTC7A_HUMAN	858	0.1154	0.2560	0.2552	0.3075	0.2984	0.3989		FALSE	TRUE		FALSE	
Q86TV6	TTC7B	TTC7B_HUMAN	843	0.0973	0.2327	0.2847	0.3344	0.2313	0.3603		TRUE	FALSE		FALSE	
Q8TAM2	TTC8	TTC8_HUMAN	541	0.1904	0.2892	0.2514	0.2744	0.2643	0.3819		FALSE	TRUE		FALSE	
Q92623	TTC9A	TTC9A_HUMAN	222	0.4717	0.4550	0.5090	0.5145	0.6216	0.5948		FALSE	FALSE		FALSE	
Q8N6N2	TTC9B	TTC9B_HUMAN	239	0.5439	0.5516	0.5649	0.5686	0.7029	0.6506		FALSE	FALSE		FALSE	
Q8N5M4	TTC9C	TTC9C_HUMAN	171	0.4269	0.4556	0.5263	0.5011	0.5848	0.5418		FALSE	FALSE		FALSE	
Q9H3U1	UN45A	UN45A_HUMAN	944	0.0477	0.2224	0.3273	0.3626	0.1642	0.3576		TRUE	FALSE	MUTAGEN 33 33	TRUE	
Q8IWX7	UN45B	UN45B_HUMAN	931	0.0473	0.1898	0.1794	0.2739	0.1772	0.3365	FALSE	DISEASE: Catar DISEASE: Crani	TRUE	MUTAGEN 1093	FALSE	
O14607	UTY	UTY_HUMAN	1347	0.3088	0.3425	0.2725	0.2968	0.4447	0.4761	TRUE		FALSE		TRUE	
Q96RL7	VP13A	VP13A_HUMAN	3174	0.0548	0.1934	0.1994	0.2436	0.2023	0.3387	FALSE		TRUE		FALSE	
Q8NEZ3	WDR19	WDR19_HUMAN	1342	0.0201	0.1558	0.1244	0.1769	0.1185	0.2769	FALSE		TRUE		FALSE	
Q8N5D0	WDTC1	WDTC1_HUMAN	677	0.1610	0.2464	0.2171	0.2617	0.2866	0.3865	TRUE		FALSE		FALSE	
Q8IWR0	Z3H7A	Z3H7A_HUMAN	971	0.2142	0.3024	0.3007	0.3316	0.4274	0.4524	TRUE		FALSE		FALSE	
Q9UGR2	Z3H7B	Z3H7B_HUMAN	977	0.2692	0.3446	0.3889	0.3819	0.5159	0.5139	FALSE		FALSE		MUTAGEN 241 2	TRUE
O60293	ZC3H1	ZC3H1_HUMAN	1989	0.4681	0.4735	0.4374	0.4430	0.5892	0.6166	FALSE		FALSE		FALSE	
Q9H0C1	ZMY12	ZMY12_HUMAN	365	0.0932	0.2103	0.2384	0.2279	0.1699	0.2865	FALSE		FALSE		FALSE	