

Supplementary Table S1

AAGAB	CD79A	ERCC5	HDAC4	MALT1	NTRK1	RNASEL	STAT3
ABCA5	CD79B	ERCC6	HFE	MAP2K1	NUMA1	RNF139	STK11
ABCB11	CD81	ESCO2	HIST1H3B	MAP2K2	NUP214	RNF43	STK4
ABCC6	CD96	ETV6	HLA-DRB1	MAP2K4	OCA2	RNF6	STS
ABL1	CDC73	EVC	HMBS	MAP3K1	OCRL	RPGRIP1L	SUFU
ACAN	CDH1	EVC2	HMGA2	MAP3K8	OFD1	RPL10	TAF15
ACD	CDH23	EWSR1	HNF1A	MAPK1	OGG1	RPL11	TAL1
ACTB	CDK4	EXO1	HNF1B	MAPRE2	PALB2	RPL15	TAL2
ACTG2	CDKN1A	EXT1	HNF4A	MAX	PALLD	RPL18	TBX18
ACVR1B	CDKN1B	EXT2	HOXB13	MBTPS2	PARN	RPL26	TCF3
ACVRL1	CDKN1C	EYA1	HOXD13	MC1R	PAX3	RPL27	TCF4
ADA	CDKN2A	EZH2	HPGD	MCM4	PAX5	RPL35	TCOF1
ADAMTS3	CDKN2B	FAH	HPS1	MDC1	PAX6	RPL35A	TCTN3
AGGF1	CDKN2C	FAM111B	HPS3	MDH2	PAX7	RPL5	TEK
AIP	CDKN2D	FAM175A	HPS4	MDM2	PBRM1	RPS10	TERC
AKT1	CEBPA	FAM20A	HPS5	MDM4	PDCD10	RPS14	TERF1
ALK	CEP57	FAM20C	HPS6	MED12	PDE6D	RPS17	TERF2IP
ALX3	CHD7	FAN1	HRAS	MEN1	PDGFB	RPS19	TERT
ALX4	CHEK1	FANCA	HSPG2	MET	PDGFRA	RPS20	TET2
AMER1	CHEK2	FANCB	HUS1	MFN2	PDGFRB	RPS24	TFAP2A
ANKRD26	CHRNA7	FANCC	ICOS	MGAT2	PDGFRL	RPS26	TFE3
ANTXR1	CIC	FANCD2	IDH1	MGMT	PHF21A	RPS27	TG
ANTXR2	COL11A2	FANCE	IDH2	MINPP1	PHF6	RPS28	TGFBR2
AP2S1	COL14A1	FANCF	IGF2	MITF	PHOX2B	RPS29	THPO
AP3B1	COL18A1	FANCG	IGF2R	MLF1	PICALM	RPS7	TIMELESS
APC	COL1A1	FANCI	IGHM	MLH1	PIEZO2	RRAS	TINF2
APC2	COL2A1	FANCL	IGLL1	MLH3	PIGA	RSP01	TJP2
AR	COL4A5	FANCM	IKBKG	MLLT10	PIGL	RTEL1	TMC6
ARHGAP26	COL4A6	FAS	IKZF1	MLLT11	PIK3CA	RUNX1	TMC8
ARID1A	COL7A1	FASLG	IL12A	MMEL1	PIK3R1	SAMD9	TMEM127
ARID1B	COMP	FAT4	IL12RB1	MMP1	PLAG1	SAMD9L	TMEM216
ARID2	CPLX1	FBXW7	IL2RG	MN1	PLCD1	SBDS	TMEM67
ARMC5	CR2	FCN3	IL7R	MNX1	PMS1	SCN4A	TNFAIP3
ARSA	CREB1	FDPS	ING1	MPL	PMS2	SCN9A	TNFRSF10B
ASCC1	CREBBP	FERMT1	INPP5E	MRE11	PMVK	SDHA	TNFRSF13B
ASCL1	CRKL	FGF3	INTU	MRE11A	PNP	SDHAF2	TNFRSF13C
ASPSCR1	CRLF2	FGFR1	IRF1	MS4A1	POLA1	SDHB	TNFRSF1B
ASXL1	CSF1R	FGFR2	IRF5	MSH2	POLD1	SDHC	TNFRSF4
ATM	CSF3R	FGFR3	ITK	MSH3	POLE	SDHD	TNFSF12
ATP7A	CTBP1	FGFRL1	JAG1	MSH6	POLH	SEC23A	TNFSF15
ATP7B	CTC1	FH	JAGN1	MSR1	POLR1C	SEC23B	TNPO3
ATR	CTHRC1	FIBP	JAK1	MST1	POLR1D	SEMA3C	TOP2A

ATRX	CTLA4	FLCN	JAK2	MT-CO1	POLR2A	SEMA3D	TOP3A
AXIN1	CTNNA1	FLNA	JAK3	MT-CO2	PORCN	SERPINA1	TOPBP1
AXIN2	CTNNB1	FLT3	KARS	MT-CO3	POT1	SETBP1	TP53
B2M	CTR9	FLT4	KAT6B	MT-ND1	POU2AF1	SETD2	TP53BP1
B3GALT6	CTSA	FN1	KCNAB2	MT-ND4	POU6F2	SF3B1	TP63
BABAM1	CTSC	FOXC2	KCNE3	MT-ND5	PPM1D	SFTPA2	TRAF7
BAP1	CXCR4	FOXE1	KCNH1	MT-ND6	PPP2R1A	SFTPC	TREM2
BARD1	CYLD	FOXI1	KCNJ10	MT-TL1	PPP2R1B	SH2B3	TREX1
BCCIP	CYP11B1	FOXL2	KCNQ1	MT-TS1	PRCC	SH2D1A	TRIM28
BCL10	CYP11B2	FOXO1	KCNQ1OT1	MT-TS2	PRDM1	SH3GL1	TRIM37
BCL2	CYP26C1	FOXP1	KDM5C	MTAP	PRDM16	SHH	TRIP13
BCL6	CYSLTR2	FUBP1	KDM6A	MTM1	PRF1	SHOC2	TRPS1
BCOR	DAXX	FUZ	KDR	MUTYH	PRKAR1A	SHOX	TRPV3
BCR	DCC	FZD2	KDSR	MVD	PRKCD	SIX1	TSC1
BDNF	DCLRE1C	G6PC	KEAP1	MVK	PSAP	SIX6	TSC2
BICC1	DDB2	G6PC3	KIAA0753	MYC	PTCH1	SKI	TSG101
BIRC3	DDIT3	GABRD	KIF11	MYCL	PTCH2	SKP2	TSHR
BLM	DDX41	GALNT12	KIF1B	MYCN	PTEN	SLC17A9	TSR2
BLNK	DHCR24	GATA1	KIF7	MYD88	PTH1R	SLC22A18	TUBB
BLOC1S3	DHCR7	GATA2	KIT	MYH11	PTPN11	SLC25A13	TWIST1
BLOC1S6	DHH	GATA3	KITLG	MYH8	PTPN3	SLC26A2	TYR
BMPER	DICER1	GATA4	KLF4	MYLK	RAD1	SLC26A4	TYROBP
BMPR1A	DIS3L2	GBA	KLF6	MYO1H	RAD17	SLC37A4	U2AF1
BMPR1B	DKC1	GCGR	KLLN	NBEAL2	RAD21	SLC45A2	UBE2T
BRAF	DLC1	GCM2	KMT2C	NBN	RAD50	SLC49A4	UIMC1
BRAP	DLEC1	GDF2	KMT2D	NCOA3	RAD51	SLCO2A1	UROD
BRCA1	DMRT3	GDF5	KRAS	NCOR1	RAD51A	SLX4	USB1
BRCA2	DNAJC21	GNDF	KRIT1	NDP	RAD51B	SMAD2	USP8
BRCC3	DNASE1L3	GFI1	KRT1	NEK1	RAD51C	SMAD4	VAMP7
BRE	DNMT1	GFI1B	KRT10	NEK9	RAD51D	SMARCA4	VANGL1
BRIP1	DNMT3A	GJA1	KRT14	NELFA	RAD52	SMARCAL1	VANGL2
BTK	DOCK8	GJB2	KRT16	NF1	RAD54B	SMARCB1	VHL
BUB1	DPM1	GJB3	KRT17	NF2	RAD54L	SMARCE1	VPS45A
BUB1B	DTNBP1	GJB4	KRT5	NFE2L2	RAD9A	SMO	WAS
BUB3	DVL1	GJB6	KRT6B	NFKB1	RAF1	SNAI2	WASHC5
C12orf70/FAAP100	DVL3	GLI1	KRT9	NFKB2	RAG1	SOCS1	WDPCP
C19orf40/FAAP24	DYNC2H1	GLI3	L2HGDH	NHP2	RAG2	SOS1	WIPF1
C1S	DYNC2LI1	GNA11	LAMA3	NKX2-1	RARA	SOS2	WNT10A
C2CD3	ECE1	GNAQ	LAMB3	NLRP1	RASA1	SOX2	WNT5A
CACNA1S	ECM1	GNAS	LAMC2	NME1	RASA2	SOX9	WRAP53
CALR	EDN3	GNAS1	LEMD3	NOD2	RASSF1	SPIB	WRN
CARD11	EDNRB	GNB1	LETM1	NOP10	RB1	SPINK1	WT1
CARD14	EFL1	GNPTAB	LIG4	NOTCH1	RB1CC1	SPOP	WWOX

CASP10	EGFR	GPC3	LIN28B	NOTCH2	RBBP8/CtP	SPRED1	XIAP
CASP8	EIF2AK4	GPC4	LMNA	NOTCH3	RECQL	SPRTN	XPA
CBFB	ELA2	GPC6	LMO1	NPM1	RECQL2	SQSTM1	XPC
CBL	ELANE	GPR101	LMOD1	NR0B1	RECQL4	SRC	XRCC2
CC2D2A	ELMO2	GPR143	LMX1B	NR4A2	RECE	SRD5A3	XRCC3
CCBE1	ENG	GPR35	LPP	NR4A3	REST	SRP54	XRCC4
CCDC22	ENPP1	GREM1	LRP5	NR5A1	RET	SRP72	ZFPM2
CCM2	EP300	H19	LRRC8A	NRAS	RFWD3	SRSF2	ZNF350
CCND1	EPCAM	H3F3A	LYST	NRTN	RHBDF2	SRY	
CD19	ERBB2	HABP2	LZTR1	NSD1	RINT1	SSX1	
CD27	ERCC1	HACE1	LZTS1	NSD2	RIT1	SSX2	
CD28	ERCC2	HAVCR2	MAD2L2	NSD3	RMI1	STAG2	
CD40LG	ERCC3	HAX1	MAFA	NSUN2	RMI2	STAG3	
CD70	ERCC4	HBB	MAGT1	NTHL1	RMRP	STAT1	

Supplementary Table S2

Case_ no	Age at operati on date (AV)	Sex	Histological diagnosis (including results from somatic sequencing)	Soft tissue/bone/GIST/ GYN	Maligna nt sarcoma ?	Grad e	Origin	Anatomy (primary tumor)
1	67	Man	GIST	GIST	GIST		Primary	Stomach
2	75	Woma n	Endometrial stromal cell nodulus	GYN	N		Primary	Uterus
3	45	Man	Myxofibrosarcom a	soft tissue	Y	High	Primary	Subcutaneous
7	74	Woma n	Schwannoma	GIST	N		Primary	Stomach
8	66	Man	GIST	GIST	GIST		Primary	Stomach
9	76	Man	GIST	GIST	GIST		Primary	Stomach
11	79	Woma n	GIST	GIST	GIST		Primary	Stomach
12	86	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	Subcutaneous
14	77	Woma n	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
15	53	Woma n	GIST	GIST	GIST		Primary	Small intestine
16	70	Man	GIST	GIST	GIST		Primary	Stomach
18	57	Woma n	Synovial sarcoma	soft tissue	Y	High	Primary	Kidney
19	74	Woma n	GIST	GIST	GIST		Primary	Small intestine
20	64	Man	US	soft tissue	Y	High	Recurren ce	Subcutaneous
21	68	Man	GIST	GIST	GIST		Primary	Small intestine
22	60	Woma n	GIST	GIST	GIST		Primary	Stomach
23	55	Woma n	Lipoma	soft tissue	N		Primary	Intramuscular
25	76	Woma n	Leiomyosarcoma	soft tissue	Y	High	Primary	Retroperitoneum
26	76	Man	Leiomyosarcoma	soft tissue	Y	High	Metastas is	Intramuscular

29	76	Man	Myxofibrosarcoma	soft tissue	Y	High	Primary	Intramuscular
30	77	Man	Liposarcoma, well differentiated	soft tissue	Y	Low	Primary	Intramuscular
32	66	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
35	42	Man	Schwannoma	soft tissue	N		Primary	Pelvis
36	75	Woman	Hemangioma	soft tissue	N		Primary	Subcutaneous
37	51	Woman	Tenosynovial giant cell tumor	soft tissue	N		Primary	Intraarticular
38	61	Woman	MPNST	soft tissue	Y	High	Primary	Subcutaneous
39	80	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	Subcutaneous
40	55	Woman	Leiomyoma	GYN	N		Primary	Uterus
41	75	Man	Spindle cell lipoma	soft tissue	N		Primary	Subcutaneous
42	48	Man	Myolipoma	soft tissue	N		Primary	Subcutaneous
43	69	Man	Intranodal Palisaded Myofibroblastoma	soft tissue	N		Primary	Subcutaneous
44	49	Woman	Extraskeletal myxoid chondrosarcoma	soft tissue	Y	High	Primary	Subcutaneous/intramuscular
45	67	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	Retroperitoneum
47	75	Man	Chordoma	bone	Y	Low	Primary	Sacrum
48	61	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	Subcutaneous
49	72	Man	Hemangioma	soft tissue	N		Primary	Soft tissue
50	68	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
51	65	Woman	Lipoma	soft tissue	N		Primary	Subcutaneous
52	22	Woman	Osteosarcoma, parosteal	bone	Y	Low	Primary	Bone
53	36	Woman	Granular cell tumor	soft tissue	N		Primary	Paravertebral
54	78	Man	Spindle cell lipoma	soft tissue	N		Primary	Subcutaneous
55	35	Woman	Giant cell tumor	Bone	N		Primary	bone
56	76	Woman	GIST	GIST	GIST		Primary	Stomach
57	50	Woman	Fibromatosis	soft tissue	N		Primary	Subcutaneous
58	39	Woman	Leiomyoma	GYN	N		Primary	Uterus
59	40	Woman	Leiomyoma	GYN	N		Primary	Uterus
60	46	Man	US	soft tissue	Y	High	Primary	Intramuscular
61	74	Man	PEComa	soft tissue	Y	High	Primary	Retroperitoneum
62	62	Man	GIST	GIST	GIST		Primary	Stomach
63	70	Man	GIST	GIST	GIST		Primary	Stomach
64	58	Woman	Lipoblastoma	soft tissue	N		Primary	Subcutaneous
65	70	Man	GIST	GIST	GIST		Primary	Small intestine
66	76	Woman	Myxofibrosarcoma	soft tissue	Y	High	Primary	Subcutaneous
67	66	Man	Angiosarcoma	soft tissue	Y	High	Primary	Breast
69	50	Man	MPNST, epitheloid	soft tissue	Y	High	Primary	Soft tissue
70	55	Man	Lipoma	soft tissue	N		Primary	Intramuscular
71	49	Woman	Leiomyosarcoma	soft tissue	Y	High	Metastasis	Retroperitoneum
72	60	Woman	Pleomorphic liposarcoma	soft tissue	Y	High	Primary	Subcutaneous

73	53	Woman	Leiomyosarcoma	GYN	Y	High	Metastasis	Retroperitoneum
74	27	Man	Desmoid fibromatosis	soft tissue	N		Primary	Subcutaneous/intramuscular
75	55	Man	GIST	GIST	GIST		Primary	Stomach
76	84	Man	Pleomorphic liposarcoma	soft tissue	Y	High	Primary	Soft tissue
77	69	Woman	GIST	GIST	GIST		Primary	Stomach
78	77	Woman	US	soft tissue	Y	High	Primary	Intramuscular
79	58	Woman	Chondrosarcoma	bone	Y	High	Primary	Skeleton, axial
81	78	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	Soft tissue
82	18	Woman	Osteosarcoma, chondroblastic	bone	Y	High	Primary	Pelvic bone
83	76	Man	US	soft tissue	Y	High	Primary	Subcutaneous
84	60	Man	Lipoma	soft tissue	N		Primary	Groin
85	3	Woman	Lipoblastoma	soft tissue	N		Primary	Intramuscular
86	62	Man	Liposarcoma, dedifferentiated	soft tissue	Y	Low	Primary	Retroperitoneum
87	77	Man	Schwannoma	soft tissue	N		Primary	Intramuscular
88	75	Man	MPNST	soft tissue	Y	High	Primary	Subcutaneous
89	64	Man	US	soft tissue	Y	High	Metastasis	Intramuscular
90	67	Man	US	soft tissue	Y	High	Primary	Intramuscular
91	61	Man	Pleomorphic liposarcoma	soft tissue	Y	High	Primary	Subcutaneous
92	66	Woman	GIST	GIST	GIST		Primary	Stomach
93	59	Man	Pleomorphic liposarcoma	soft tissue	Y	High	Primary	Intramuscular
94	37	Woman	Fibromatosis	soft tissue	N		Primary	Intramuscular
95	72	Woman	Liposarcoma, dedifferentiated	soft tissue	Y	High	Primary	Retroperitoneum
96	78	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
97	47	Man	Myxoma	soft tissue	N		Primary	Intramuscular
98	73	Man	Liposarcoma	soft tissue	Y	Low	Primary	Intramuscular
99	68	Man	Liposarcoma, dedifferentiated	soft tissue	Y	High	Primary	Retroperitoneum
100	53	Woman	Endometrial stromal cell sarcoma	GYN	Y	High	Recurrence	Uterus
101	43	Woman	Leiomyosarcoma	soft tissue	Y	High	Primary	Retroperitoneum
102	44	Man	GIST	GIST	GIST		Primary	Stomach
103	62	Woman	GIST	GIST	GIST		Primary	Stomach
104	63	Man	Myxofibrosarcoma	soft tissue	Y	High	Primary	Subcutaneous
105	58	Man	Fibromatosis	soft tissue	N		Primary	Subcutaneous
106	86	Man	US	soft tissue	Y	High	Primary	Subcutaneous
107	80	Woman	Extraskeletal myxoid chondrosarcoma	soft tissue	Y	High	Primary	Soft tissue
109	55	Woman	Elastofibroma	soft tissue	N		Primary	Subcutaneous
111	38	Woman	Leiomyosarcoma	GYN	Y	High	Metastasis	Liver
112	62	Woman	Tenosynovial giant cell tumor	soft tissue	N		Primary	Intraarticular
114	23	Man	Giant cell tumor	Bone	N		Primary	Femur

115	79	Woman	Adenosarcoma, sarcomatous overgrowth	GYN	Y	High	Primary	Uterus
116	45	Man	MPNST	Soft tissue	Y	High	Metastasis	Intramuscular
117	65	Woman	Solitary fibrous tumor	Soft tissue	Y	Low	Primary	Pleura
118	52	Woman	Solitary fibrous tumor	soft tissue	Y	Low	Primary	Subcutaneous
119	51	Woman	Phyllodes	soft tissue	Y	Low	Primary	Breast
120	56	Woman	Liposarcoma, dedifferentiated	soft tissue	Y	High	Primary	Retroperitoneum
121	26	Woman	Synovial sarcoma	soft tissue	Y	High	Primary	Soft tissue
122	65	Woman	PEComa	GYN	Y	High	Primary	Uterus
123	67	Woman	Solitary fibrous tumor	soft tissue	Y	Low	Primary	Retroperitoneum
124	70	Woman	US	soft tissue	Y	High	Primary	Subcutaneous
125	54	Woman	Leiomyosarcoma	Soft tissue	Y	High	Metastasis	Pelvis
126	75	Woman	Chondrosarcoma, dedifferentiated	soft tissue	Y	High	Primary	Soft tissue
127	77	Man	US	soft tissue	Y	High	Primary	Intramuscular
128	44	Woman	Leiomyoma	GYN	N		Primary	Uterus
129	45	Man	Leiomyosarcoma	soft tissue	Y	High	Metastasis	Perineum
130	78	Woman	Adenosarcoma, sarcomatous overgrowth	GYN	Y	High	Primary	Uterus
131	37	Woman	GIST	GIST	GIST		Primary	Stomach
132	62	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
133	49	Woman	Fibromatosis	soft tissue	N		Primary	Intrabdominal
134	52	Woman	Leiomyosarcoma	GYN	Y	High	Metastasis	Uterus
135	76	Man	Liposarcoma, dedifferentiated	soft tissue	Y	High	Recurrence	soft tissue
136	57	Man	Pleomorphic liposarcoma	soft tissue	Y	High	Primary	Subcutaneous
137	63	Woman	Solitary fibrous tumor	soft tissue	Y	Low	Primary	soft tissue
139	78	Woman	Radiation induced sarcoma	soft tissue	Y	High	Metastasis	Subcutaneous
140	55	Woman	Solitary fibrous tumor	soft tissue	Y	Low	Primary	Retroperitoneum
141	53	Woman	GIST	GIST	GIST		Primary	Duodenum
142	76	Man	Leiomyosarcoma	soft tissue	Y	Low	Primary	Subcutaneous
143	71	Woman	Myxofibrosarcoma	soft tissue	Y	High	Metastasis	Intramuscular
144	82	Woman	GIST	GIST	GIST		Primary	Ileum
145	70	Man	GIST	GIST	GIST		Primary	Small intestine
146	62	Man	Liposarcoma	soft tissue	Y	Low	Primary	Retroperitoneum
147	60	Man	US	soft tissue	Y	High	Metastasis	bone
148	42	Woman	Schwannoma	soft tissue	N		Primary	soft tissue
149	53	Man	GIST	GIST	GIST		Primary	Ileum
150	74	Woman	Radiation induced sarcoma	soft tissue	Y	High	Primary	Groin
151	47	Man	GIST	GIST	GIST		Primary	Stomach

152	35	Man	MPNST	soft tissue	Y	High	Primary	Intramuscular
153	23	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	soft tissue
154	49	Woman	Osteosarcoma, extraskeletal	soft tissue	Y	High	Primary	soft tissue
155	69	Man	Liposarcoma, dedifferentiated	soft tissue	Y	High	Recurrence	Intramuscular
157	79	Man	Myxofibrosarcoma	soft tissue	Y	High	Recurrence	Subcutaneous
158	79	Woman	Histiocytic sarcoma	soft tissue	Y	High	Primary	Subcutaneous
159	50	Woman	Leiomyoma	GYN	N		Primary	Uterus
160	82	Woman	MPNST	soft tissue	Y	High	Primary	Subcutaneous
161	48	Woman	Leiomyosarcoma	GYN	Y	High	Recurrence	Intrabdominal
163	36	Man	Rhabdomyosarcoma, pleomorphic	soft tissue	Y	High	Primary	soft tissue+bone
164	27	Man	Perineuroma (GAB1::ALB1)	soft tissue	N		Primary	Intramuscular
165	76	Man	GIST	GIST	GIST		Primary	Colon
166	64	Man	GIST	GIST	GIST		Primary	Stomach
167	42	Man	Myxofibrosarcoma	soft tissue	Y	High	Primary	Subcutaneous
168	58	Man	MPNST	soft tissue	Y	High	Metastasis	Subcutaneous
169	75	Man	Synovial sarcoma	soft tissue	Y	High	Primary	soft tissue
170	65	Woman	Myxofibrosarcoma	soft tissue	Y	High	Primary	Subcutaneous
171	59	Man	Chondrosarcoma	bone	Y	High	Primary	ribs/soft tissue
172	38	Woman	Phyllodes, malignant	soft tissue	Y	High	Primary	Breast
173	76	Man	US	soft tissue	Y	High	Recurrence	Subcutaneous
174	64	Man	Liposarcoma, dedifferentiated	soft tissue	Y	High	Recurrence	Intramuscular
175	79	Man	MPNST	soft tissue	Y	High	Primary	Intramuscular
176	52	Woman	Endometrial stromal cell sarcoma	GYN	Y	Low	Recurrence	Uterus
177	87	Man	Myxofibrosarcoma	soft tissue	Y	Low	Recurrence	Subcutaneous
178	74	Man	Liposarcoma, dedifferentiated	soft tissue	Y	High	Metastasis	Retroperitoneum
179	79	Man	GIST	GIST	GIST		Primary	Stomach
180	39	Woman	Leiomyosarcoma	GYN	Y	High	Metastasis	Uterus
181	82	Man	Leiomyosarcoma	soft tissue	Y	High	Primary	Subcutaneous
182	80	Man	US	soft tissue	Y	High	Metastasis	Intramuscular
183	58	Man	Chondrosarcoma, dedifferentiated	bone	Y	High	Primary	
184	82	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
187	81	Man	Liposarcoma	soft tissue	Y	Low	Recurrence	Retroperitoneum
188	56	Woman	Osteosarcoma, extraskeletal	soft tissue	Y	High	Recurrence	Subcutaneous
189	67	Woman	US	soft tissue	Y	High	Primary	Intramuscular
190	73	Man	GIST	GIST	GIST		Metastasis	Colon
191	79	Woman	Myxofibrosarcoma	soft tissue	Y	High	Primary	Subcutaneous
192	54	Man	Leiomyosarcoma	soft tissue	Y	Low	Primary	Retroperitoneum
194	39	Man	LGFMS	soft tissue	Y	Low	Primary	Intramuscular

195	61	Man	Desmoplastic fibroblastoma	soft tissue	N		Primary	soft tissue
196	67	Woman	Radiation induced sarcoma	soft tissue	Y	High	Recurrence	Subcutaneous
197	54	Man	Chondrosarcoma	bone	Y	High	Primary	Pelvic bone
199	63	Man	Lipoma	soft tissue	N		Primary	Retroperitoneum
200	71	Woman	MPNST	soft tissue	Y	High	Primary	Retroperitoneum
201	43	Woman	Leiomyoma	GYN	N		Primary	Uterus
202	15	Man	Aneurysmal bone cyst	bone	N		Primary	Femur
203	57	Woman	Adenosarcoma, sarcomatous overgrowth	GYN	Y	High	Primary	Uterus
204	78	Woman	GIST	GIST	GIST		Primary	Stomach
205	55	Woman	PEComa	GYN	N		Primary	Uterus
206	79	Woman	US	soft tissue	Y	high	Primary	Subcutaneous
207	57	Man	Dermatofibrosarcoma protuberans, fibrosarcoma	soft tissue	Y	low	Primary	Subcutaneous
208	49	Man	Leiomyosarcoma	soft tissue	Y	High	Recurrence	Intrabdominal
209	78	Woman	Solitary fibrous tumor, malignant	soft tissue	Y	High	Recurrence	Subcutaneous
210	69	Man	US	soft tissue	Y	High	Primary	Intramuscular
211	46	Woman	Myxoid liposarcoma	soft tissue	Y	Low	Metastasis	Intramuscular
212	66	Woman	Leiomyoma	GYN	N		Primary	Uterus
213	64	Woman	Osteosarcoma, chondroblastic	bone	Y	High	Metastasis	bone
214	61	Woman	Elastofibroma	Soft tissue	N		Primary	Subcutaneous
215	23	Woman	Alveolar soft part sarcoma	Soft tissue	Y	High	Primary	Intramuscular
216	61	Man	Liposarcoma, dedifferentiated	Soft tissue	Y	High	Primary	Small intestine
217	54	Woman	GIST	GIST	GIST	High	Primary	Stomach
218	44	Woman	Leiomyoma	GYN	N		Primary	Uterus
220	67	Man	Leiomyosarcoma	Soft tissue	Y	High	Primary	Retroperitoneum
221	82	Man	GIST	GIST	GIST		Primary	Small intestine
222	76	Woman	MPNST	Soft tissue	Y	High	Recurrence	
223	39	Man	GIST	GIST	GIST		Primary	Small intestine
226	65	Man	Myxoid liposarcoma	Soft tissue	Y	Low	Primary	Subcutaneous
227	54	Man	Dermatofibrosarcoma protuberans	Soft tissue	Y	Low	Primary	Subcutaneous
228	49	Man	GIST	GIST	GIST		Primary	Stomach
229	82	Man	Myxofibrosarcoma	Soft tissue	Y	High	Recurrence	
230	78	Woman	Neurofibroma / Schwannoma hybrid nerve sheath tumor	Soft tissue	N		Primary	Soft tissue
231	52	Man	Liposarcoma dedifferentiated	Soft tissue	Y	High	Primary	Soft tissue
232	63	Woman	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Subcutaneous
233	84	Woman	Histiocytic sarcoma	Soft tissue	Y	High	Primary	Subcutaneous

234	66	Woman	Solitary fibrous tumor	Soft tissue	Y	Low	Primary	Pleura
235	15	Woman	Chondrosarcoma	Bone	N		Primary	Bone
236	73	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
237	47	Man	Myoepithelial carcinoma	Soft tissue	Y	High	Primary	Soft tissue
238	61	Woman	Solitary fibrous tumor	Soft tissue	Y	High	Primary	Ribs
240	48	Man	Dermatofibrosarcoma protuberans	Soft tissue	Y	Low	Recurrence	Subcutaneous
241	77	Woman	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Intramuscular
242	76	Man	Myxoid sarcoma	Soft tissue	Y	Low	Primary	Lung
243	56	Man	Myxofibrosarcoma	Soft tissue	Y	High	primary	Intramuscular
244	24	Woman	Giant cell tumor	Bone	N		Primary	bone
246	43	Man	Schwannoma	Soft tissue	N		Primary	Soft tissue
247	28	Woman	Myopericytomatosis	Soft tissue	N		Primary	Intramuscular
248	48	Woman	Phosphaturic mesenchymal tumor	Soft tissue	N		Primary	Subcutaneous
249	61	Woman	Myoepithelial carcinoma	Soft tissue	Y	High	Recurrence	Subcutaneous
250	49	Woman	Leiomyosarcoma	GYN	Y	High	Primary	Uterus
251	78	Man	Extra skeletal myxoid chondrosarcoma	Soft tissue	Y	High	Primary	Subcutaneous
252	66	Woman	Liposarcoma well differentiated	Soft tissue	Y	Low	Primary	Retroperitoneum
253	64	Woman	Sarcoma	Soft tissue	Y	High	Metastasis	-
254	60	Man	Extraskeletal osteosarcoma	Soft tissue	Y	High	Recurrence	Subcutaneous
256	38	Man	GIST	GIST	GIST	High	Primary	Small intestine
257	70	Man	Chondrosarcoma	Bone	Y	High	Primary	Bone
258	56	Woman	Lipoblastomatosis	Soft tissue	Y	Low	Recurrence	Retroperitoneum
259	42	Man	GIST	GIST	GIST		Primary	Small intestine
260	56	Woman	Leiomyoma	GYN	N		Primary	Uterus
261	76	Woman	Leiomyosarcoma	Soft tissue	Y	High	Primary	Retroperitoneum
262	87	Woman	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Intramuscular
263	36	Woman	Extraskeletal myxoid chondrosarcoma	soft tissue	Y	High	Primary	Intramuscular
265	45	Woman	Leiomyoma	GYN	N		Primary	Uterus
266	74	Woman	GIST	GIST	GIST	Low	Primary	Stomach
267	64	Woman	Angiosarcoma	Soft tissue	Y	High	Primary	breast
268	72	Woman	Mesonephric-like carcinosarcoma	GYN	N		Primary	Uterus
269	36	Woman	Scwhannoma	Soft tissue	N		Recurrence	Soft tissue
270	58	Man	Chondrosarcoma	Bone	Y	High	Primary	Bone
271	73	Man	Leiomyosarcoma	Soft tissue	Y	High	Primary	Retroperitoneum
272	42	Man	Fibrohistiocytoma	Soft tissue	N		Primary	SUBcutaneous
273	20	Woman	Osteosarcoma, dedifferentiated	Soft tissue	Y	High	Recurrence	Subcutaneous

274	62	Man	US	Soft tissue	Y	High	Metastasis	Soft tissue
275	24	Woman	Giant cell tumor of soft-parts	Soft tissue	N		Primary	Subcutaneous
276	58	Woman	Liposarcoma	Soft tissue	Y	High	Recurrence	Retroperitoneum
277	60	Man	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Subcutaneous
278	59	Woman	GIST	GIST	GIST		Primary	Stomach
279	30	Woman	Epitheloid sarcoma	Soft tissue	Y	High	Recurrence	Soft tissue
280	69	Woman	Leiomyosarcoma	Soft tissue	Y	High	Primary	Subcutaneous
281	23	Woman	Desmoid fibromatosis	Soft tissue	Y		Primary	Small intestine
282	55	Woman	US	Soft tissue	Y	High	Primary	Subcutaneous
284	65	Man	Atypical spindle cell lipoma	Soft tissue	N		Primary	Subcutaneous
285	61	Man	GIST	GIST	GIST		Primary	Stomach
286	62	Woman	Solitary fibrous tumor	Soft tissue	Y	Low	Primary	Subcutaneous
287	13	Woman	RAF1-associated sarcoma	Soft tissue	Y		Primary	Intramuscular
288	76	Woman	Osteosarcoma	Bone	Y	High	Primary	Femur
290	52	Man	Chondrosarcoma, grade 1	Bone	Y	Low	Primary	Rib
291	45	Woman	Solitary fibrous tumor	Soft tissue	Y	Low	Primary	Intraabdominal
292	63	Woman	Leiomyosarcoma	Soft tissue	Y	High	Metastasis	Uterus
293	74	Woman	Malign OFMT	Soft tissue	Y	High	Primary	Intraarticular
295	38	Woman	Secondary peripheral chondrosarcoma	Bone	Y	Low	Primary	Femur
297	46	Man	Metastatic osteosarcoma	Bone	Y	High	Metastasis	mandible
298	34	Man	High-grade sarcoma with SRF::E2F1 fusion	Soft tissue	Y	High	Primary	Subcutaneous
299	75	Man	Pleomorphic sarcoma	Soft tissue	Y	High	Primary	Intramuscular
300	48	Man	Epitheloid sarcoma	Soft tissue	Y	High	Primary	Intramuscular
301	82	Man	Leiomyosarcoma	Soft tissue	Y	High	Recurrence	Subcutaneous
302	58	Man	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Intramuscular
304	80	Woman	Leiomyosarcoma	Soft tissue	Y	High	Primary	Retroperitoneum
306	25	Man	MPNST	Soft tissue	Y	High	Metastasis	Brain
307	43	Woman	Leiomyoma	GYN	N		Primary	Uterus
308	71	Man	US	Soft tissue	Y	High	Primary	Subcutaneous
309	72	Man	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Subcutaneous
311	73	Woman	Synovial chondromatosis	Soft tissue	N		Primary	Soft tissue
312	59	Man	Liposarcoma	Soft tissue	Y	Low	Primary	Retroperitoneum
313	65	Woman	GIST	GIST	GIST		Primary	Small intestine
314	46	Woman	Leiomyoma	GYN	N		Primary	Uterus
315	69	Man	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Subcutaneous

317	21	Woman	Ewing sarcoma	Bone	Y	High	Primary	bone
318	36	Man	Myxoinflammatory fibroblastic sarcoma	Soft tissue	Y	Low	Primary	Subcutaneous
319	61	Woman	Liposarcoma, dedifferentiated	Soft tissue	Y	High	Primary	Intramuscular
320	11	Man	Chondroblastic osteosarcoma	Bone	Y	High	Primary	Femur
321	42	Woman	Leiomyosarcoma	GYN	Y	High	Recurrence	Intraabdominal
322	76	Woman	atypical cartilaginous tumor	Bone	Y	Low	Primary	Femur
323	82	Man	MPNST	Soft tissue	Y	High	Primary	Intramuscular
324	39	Woman	Synovial sarcoma	Soft tissue	Y	High	Primary	Stomach
325	38	Man	Chondrosarcoma, G1	Bone	Y	Low	Primary	Ilium
326	31	Woman	Low grade paraosteal osteosarcoma	Bone	Y	Low	Primary	Humerus
328	54	Woman	Leiomyoma (kontrollera)	GYN	N		Primary	Uterus
329	48	Man	Low-grade paraosteal OS	Bone	Y	Low	Primary	Bone
330	46	Woman	Leiomyosarcoma	GYN	Y	High	Metastasis	Uterus
331	63	Man	Liposarcoma	Soft tissue	Y	High	Primary	Intramuscular
335	77	Woman	US	Soft tissue	Y	High	Primary	Intramuscular
336	73	Woman	Osteosarcoma, fibroblastic	Bone	Y	High	Primary	Soft tissue/bone
337	81	Man	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Soft tissue
338	37	Woman	Liposarcoma	Soft tissue	Y	Low	Primary	Retroperitoneum
339	70	Man	Complete response (clinical diagnosis soft tissue sarcoma paravertebral)	Soft tissue	Y	High	Primary	Paravertebral
340	77	Woman	Liposarcoma dedifferentiated	soft tissue	Y	high	Primary	Retroperitoneum
343	80	Woman	Angiosarcoma	soft tissue	Y	High	Recurrence	Subcutaneous
344	60	Woman	Lipoblastoma	GYN	N	-	Primary	Uterus
345	84	Man	US	Soft tissue	Y	High	Recurrence	Subcutaneous
346	82	Woman	Spindle cell sarcoma	Soft tissue	Y	Low	Primary	Intramuscular
347	78	Woman	US	Soft tissue	Y	High	Primary	Subfascial
348	56	Man	Atypical spindle/pleomorphic lipomatous tumor	Soft tissue	Y	Low	Primary	Subcutaneous
349	79	Man	Malignant bone tumor	Bone	Y	-	Primary	Periosteal
352	84	Man	Spindle sarcoma low grade	Soft tissue	Y	Low	Primary	Paraspinal
353	59	Woman	Leiomyosarcoma	soft tissue	Y	High	Primary	Uterus
354	68	Man	Chondrosarcoma	Bone	Y	Low	Primary	Bone
355	43	Man	Desmoid fibromatosis	Soft tissue	N	-	Primary	Intramuscular
356	22	Man	Alveolar soft part sarcoma	Soft tissue	Y	High	Primary	Intramuscular

360	87	Woman	Fibroblastic sarcoma	Soft tissue	Y	Low	Primary	Subcutaneous
361	29	Man	Myoepithelial tumor	Soft tissue/bone	N	-	Primary	Soft tissue/bone
362	67	Woman	Myxofibrosarcoma	Soft tissue	Y	High	Primary	Subcutaneous
364	28	Woman	GIST	GIST	GIST		Primary	Stomach

GIST: Gastronintestinal stromal tumor, GYN: gynaecological tumor, MPNST: malignant peripheral nerve sheath tumor, US: undifferentiated sarcoma, N: no, Y: yes

Supplementary Table S3

Clinical characteristics	No germline finding*	Germline finding**	Significance
Age at diagnosis [mean years]	62	58	P=0.4 (NS)
Sex [% women]	53	54	Odds ratio 1.1 (NS)
Malignant sarcoma [%]	67	71	Odds ratio 1.2 (NS)

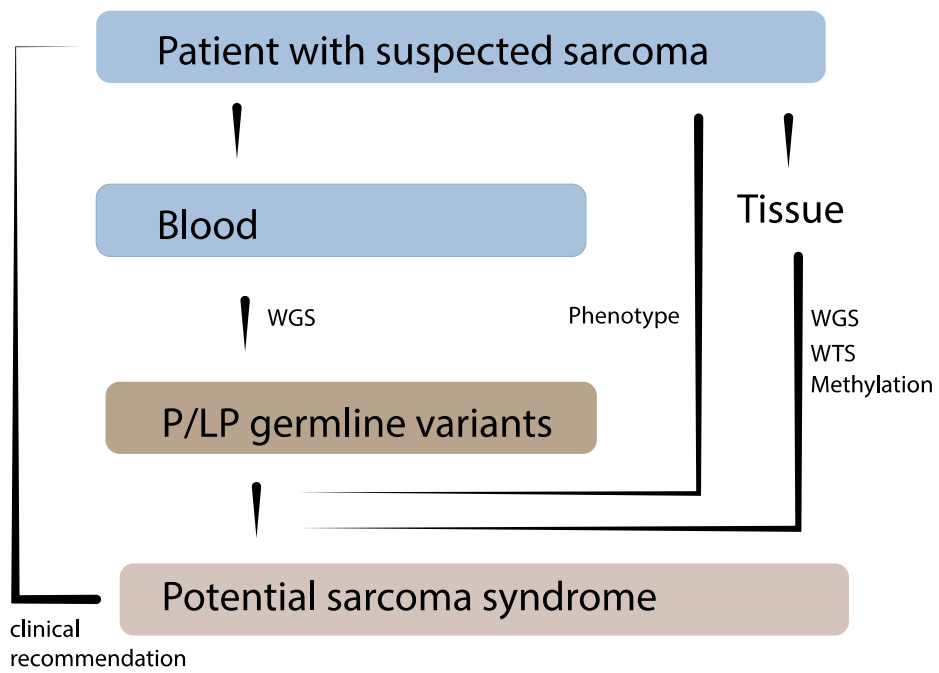
Supplementary Table S4

Supplementary table S4 Non-tumor syndrome participants

Histological diagnosis after sequencing	Germline P/LP variant	Clinical impact	Second hit summary
GIST	GJB2, NM_004004, c.35del, p.Gly12ValfsTer2	Risk factor	No second hit (compound germline)
GIST	POLG, ENST00000268124.5:c.2890C>T, R964C	Risk factor	Deletion 15q
Fibromatosis	KCNQ1, NM_181798, c.573_577del, p.Arg192CysfsTer91	Clinical action	SNV: KCNQ1, NM_181798, c.284G>A, p.Ser95Asn
Liposarcoma, dedifferentiated	SPINK1, NM_003122, c.194+2T>C	Risk factor	No second hit
Osteosarcoma, extraskeletal	GJB2, NM_004004, c.35del, p.Gly12ValfsTer2	Risk factor	No second hit (compound germline)
Liposarcoma, dedifferentiated	TGFBR2, NM_001024847, c.1685G>A, p.Arg562His	Clinical action	No second hit
Leiomyoma	TNFRSF13B, NM_012452, c.260T>A, p.Ile87Asn	Risk factor	No second hit
Aneurysmal bone cyst	IKBK, NM_003639, c.1219A>G, p.Met407Val	Risk factor	No second hit
GIST	MPL, NM_005373, c.305G>C, p.Arg102Pro	Risk factor	No second hit
PEComa	TNFRSF13B, NM_012452, c.310T>C, p.Cys104Arg	Risk factor	No second hit
Undifferentiated pleomorphic sarcoma	KCNQ1, NM_181798, c.1552C>T, p.Arg518Ter	Clinical action	No second hit
Myxofibrosarcoma	KCNQ1, NM_181798, c.914G>A, p.Trp305Ter	Clinical action	No second hit

GIST: gastrointestinal stromal tumor

Supplementary Figure S1



WGS: whole genome sequencing, WTS: whole transcriptome sequencing