

**Supplementary Table S1: Clinicopathological characteristics and mutational information of 74 patients with small gastrointestinal stromal tumors. The risk classification was clarified according to the modified NIH criteria.**

case No	Gender	Age	Tumor Size (cm)	Immunohistological	Risk classification	Mutations
P1	F	63	1.1	CD117(+);Dog1(+);CD34(+);SDHB(+);SMA(+);Desmin(-);S-100(partly+);Ki-67(2%+)	Low	PDGFRA c.A2525T p.D842V
P2	M	66	0.6	CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(+1%);SMA(partly+);S-100(-)	Very Low	KIT c.1502_1503insTGCCTA p.S501delinsSAY
P3	M	53	0.8	SDHB(-);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(+);S-100(-)	Very Low	KIT c.C1652G p.P551R; c.T1679C p.V560A
P4	F	66	1.6	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(5%+);SMA(-);S-100(-)	Low	KIT c.1733_1735del p.578_579del
P5	M	56	1.8	SDHB(-);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(+5%);SMA(partly+);S-100(-)	Low	KIT c.1675_1677del p.559_559del
P6	F	48	1.5	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(+5%);SMA(-);S-100(-)	Very Low	KIT c.T1669C p.W557R
P7	M	30	1.5	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(3%+);SMA(partly+);S-100(-)	Low	Not detected
P8	F	58	1.7	Dog-1(+);Ki-67(3%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-);SDHB(+)	Low	KIT c.1668_1679del p.556_560del
P9	F	49	1.1	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(<1%+);SMA(partly+);S-100(-)	Very Low	BRAF c.T1799A p.V600E

P10	M	60	0.9	SDHB(-);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(-);SMA(-);S-100(-)	Very Low	BRAF c.T1799A p.V600E
P11	F	52	1.7	SDHB(+);CD117(+);CD34(partly+);Desmin(-);Ki-67(1%+);SMA(partly+);S-100(-)	Very Low	KIT c.T1679A p.V560D
P12	M	52	1.2	CD34(+);CD117(+);Dog1(+);SDHB(+);SMA(partly+);Desmin(-);S-100(-);Ki-67(<1%+)	Very Low	KIT c.1667_1681del p.556_561del
P13	M	46	1.5	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(2%+);SMA(+);S-100(-)	Very Low	KIT c.1719_1739del p.573_580del
P14	M	48	1.8	Dog-1(+);Ki-67(5%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(partly+);SDHB(+)	Low	KIT c.1502_1503insTGCCTA p.S501delinsSAY
P15	F	58	0.7	Dog-1(+);Ki-67(3%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-);SDHB(+)	Low	KIT c.T1679A p.V560D
P16	F	75	1	Dog-1(+);Ki-67(2%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-);SDHB(+)	Low	KIT c.T1727C p.L576P
P17	F	61	0.8	Dog-1(+);Ki-67(2%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-);SDHB(+)	Low	KIT c.1670_1675del p.557_559del
P18	F	47	0.6	Dog-1(+);Ki-67(1%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-);SDHB(+)	Very Low	KIT c.T1669C p.W557R
P19	M	61	1.2	Dog-1(+);Ki-67(5%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-);SDHB(+)	Very Low	KIT c.T1676A p.V559D

P20	M	50	0.5	Dog-1(+);Ki-67(3%+);CD34(+);CD117(+);Desmin(-);S-100(-);SMA(-)	Very Low	KIT c.1671_1673del p.557_558del
P21	F	70	0.7	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(1%);SMA(-);S-100(-)	Very Low	KIT c.T2466A p.N822K
P22	F	53	1	CD34(+);CD117(+);Dog1(+);SMA(+);Desmin(partly+);SDHB(partly+);S-100(-);Ki-67(+)	Very Low	KIT c.1660_1674del p.554_558del
P23	F	66	1.5	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(3%+);SMA(-);S-100(-);	Very Low	KIT c.1669_1670insTTC p.W557delinsFR
P24	F	69	1.5	SDHB(+);CD117(+);CD34(+);Desmin(-);Ki-67(10%+);SMA(-);S-100(-)	High	KIT c.T1676A p.V559D
P25	F	51	1.8	CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(+10%);SMA(-);S-100(-)	Intermediate	KIT c.1502_1503insTGCCTA p.S501delinsSAY
P26	F	55	1.6	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(4%+);S-100(-)	Intermediate	KIT c.1673_1693del p.558_565del
P27	F	49	0.8	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(2%+);S-100(-)	Low	KIT c.1675_1677del p.559_559del
P28	F	48	1.7	CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(3%+);SMA(-)	Low	KIT c.1667_1672del p.556_558del
P29	F	51	0.9	SDHB(+);CD117(+);CD34(partly+);Desmin(-);Dog1(+);Ki-67(1%+);S-100(-)	Very Low	KIT c.1733_1735del p.578_579del
P30	F	56	0.8	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(+2%);S-100(-)	Very Low	KIT c.1667_1672del p.556_558del
P31	F	56	0.6	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(<1%+);S-100(-)	Very Low	KIT c.1725_1726ins30 p.Q575_L576ins10

P32	F	50	0.6	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(1%+);SMA(-);S-100(-)	Very Low	BRAF c.T1799A p.V600E
P33	M	61	2	CD117(+);CD34(+);Desmin(-);Dog1(+);SMA(-);S-100(-)	Very Low	KIT c.1716_1717insCCAACA p.D572delinsDPT
P34	M	54	0.7	CD117(+);CD34(+);Desmin(-);Dog1(+);SMA(-);S-100(-)	Very Low	BRAF c.T1799A p.V600E
P35	M	48	0.5	SDHB(+);CD117(+);CD34(+);Desmin(-);Ki-67(3%+);SMA(-);S-100(-)	Very Low	KIT c.T1676C p.V559A
P36	F	71	1.8	SDHB(+);CD117(+);CD34(+);Desmin(-);Dog1(+);Ki-67(5%+);S-100(-)	Low	KIT c.1716_1717insCCAACA p.D572delinsDPT
P37	F	59	1.9	CD117(+),CD34(+),DOG1(-),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(3%)	Very Low	KIT c.T1676A p.V559D
P38	M	51	1.1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(5%)	Very Low	KIT c.T1676A p.V559D
P39	F	73	1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.T1676A p.V559D
P40	M	54	0.8	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(-),S100(-),SDHB(+),Ki67(2%)	Very Low	KIT c.T1669A p.W557R
P41	F	64	1.5	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(2%)	Very Low	KIT c.T1669A p.W557R
P42	F	58	0.6	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(+),S100(-),SDHB(+),Ki67(3%)	Very Low	BRAF c.T1799A p.V600E
P43	M	56	1.8	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(10%)	Very Low	KIT c.C1352T p.S451F

P44	F	56	0.4	CD117(+),CD34(+),DOG1(+),SMA(-)Desmin(-),S100(-),SDHB(+),Ki67(1%)	Very Low	BRAF c.T1799A p.V600E
P45	F	49	1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(1%)	Very Low	PDGFRA c.A2543C p.N848T
P46	M	65	0.8	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.T1669A p.W557R
P47	M	69	0.9	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(+),S100(-),SDHB(-),Ki67(1%)	Very Low	PDGFRA c.C2544A p.N848K
P48	M	60	0.8	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(2%)	Very Low	KIT c.T1669A p.W557R
P49	M	41	1.2	CD117(-),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(35%)	Intermediate	KIT c.T1669A p.W557R
P50	F	54	1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(5%)	Very Low	KIT c.T1676C p.V559A
P51	F	70	1.3	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.T1676C p.V559A
P52	F	48	1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.C1352T p.S451F
P53	F	67	1.2	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.T1676A p.V559D
P54	M	50	2	CD117(+),CD34(+),DOG1(+),SMA(-)Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	BRAF c.T1799A p.V600E
P55	F	69	1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-)	Very Low	KIT c.T1679A p.V560D
P56	M	70	1.5	CD117(+),CD34(+),DOG1(+),SMA(-)Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	BRAF c.T1799A p.V600E

P57	M	58	1.2	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(2%)	Very Low	Not detected
P58	F	29	0.3	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(-),S100(-),SDHB(-),Ki67(6%)	Very Low	KIT c.T1669A p.W557R
P59	F	68	0.8	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(2%)	Very Low	KIT c.A1672G p.K558E
P60	F	47	0.3	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(-),S100(-),SDHB(+)	Very Low	BRAF c.T1799A p.V600E
P61	F	62	0.6	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.T1676A p.V559D
P62	F	40	0.5	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(+),S100(-),SDHB(+),Ki67(1%)	Very Low	PDGFRA c.1698_1712del p.S566_E571delinsR
P63	M	41	1	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(+),S100(-),SDHB(+),Ki67(1%)	Very Low	KIT c.T1669A p.W557R
P64	F	43	1.2	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(<1%)	Very Low	KIT c.C1721T p.T574I
P65	M	50	1	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(+),S100(-),SDHB(-),Ki67(<1%)	Very Low	BRAF c.T1799A p.V600E
P66	F	31	0.5	CD117(+),CD34(+),DOG1(+),SMA(+),Desmin(-),S100(-),SDHB(+),Ki67(3%)	Very Low	BRAF c.T1799A p.V600E
P67	F	55	1 . 3	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(3%)	Very Low	KIT c.C2063T p.S688L
P68	F	65	1.5	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(2%)	Very Low	KIT c.T1676A p.V559D

P69	F	69	0.8	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(3%)	Very Low	KIT c.C1652T p.P551L
P70	M	68	1.2	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(8%)	Very Low	KIT c.A1924G p.K642E
P71	F	68	1.5	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(3%)	Very Low	KIT c.T1679A p.V560D
P72	F	65	0.5	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(1%)	Very Low	KIT c.T1676A p.V559D
P73	M	77	1.5	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(-),Ki67(1%)	Very Low	KIT c.G1675A p.V559I
P74	F	63	1	CD117(+),CD34(+),DOG1(+),SMA(-),Desmin(-),S100(-),SDHB(+),Ki67(2%)	Very Low	Not detected