

Appendix 1 Immunohistochemical analysis

The expression of Ki-67 in the 4 μm -thick gastric GIST tissues was examined using the streptavidin-peroxidase (S-P) immunohistochemical method. After the paraffin blocks were cut, deparaffinized, and dehydrated, antigen retrieval was performed in a pressure cooker for two minutes with pH 8.0 ethylene-diamine-tetraacetic acid and treatment with 3% hydrogen peroxide to eliminate endogenous peroxidase activity. The slides were then incubated with primary antibodies (mouse anti-human antibodies; ZSGB-BIO, Beijing, China) at 4 °C overnight after blocking in 10% goat serum. The sections were rinsed, following which they were incubated with the goat anti-mouse biotin-conjugated IgG and stained using S-P conjugate for 30 minutes. The brown signal was developed with 3,3'-Diaminobenzidine, and the slides were counterstained with 5% hematoxylin and located in the cytoplasm, which represented positive staining for the respective proteins. The sections not treated with monoclonal antibodies were used as negative controls. Two pathologists without knowledge of the clinicopathological data of the patients independently reviewed the immunostaining slides of Ki-67.

Table S1 Demographic and clinicopathological characteristics in gastric GIST patients

Characteristic	No. (%)
Gender	
Female	68 (64.2)
Male	38 (35.8)
Age	
<60 years	47 (44.3)
≥60 years	59 (55.7)
Cigarette smoking	
Yes	17 (16.0)
No	89 (84.0)
Alcohol drinking	
Yes	7 (6.6)
No	99 (93.4)
ABO blood type[†]	
A	34 (32.4)
B	29 (27.6)
AB	9 (8.6)
O	33 (31.4)
Histologic subtype[†]	
Spindle	90 (97.8)
Epithelioid and mixed	2 (2.2)
Tumor size	
<5 cm	56 (52.8)
≥5 cm	50 (47.2)
Tumor location[†]	
Upper	26 (25.2)
Middle	64 (62.1)
Lower	13 (12.6)
Mitosis count[†]	
≤5/50 HPF	68 (71.6)
>5/50 HPF	27 (28.4)
Modified NIH risk[†]	
Very low + low	40 (41.2)
Medium	21 (21.6)
High	36 (37.1)
Tumor invasion[†]	
Mucosa	16 (15.4)
Submucosa	19 (18.3)
Muscular	34 (32.7)
Serosa	35 (33.7)
Ki-67 index[†]	
<10%	73 (76.8)
≥10%	22 (23.2)
CD117[†]	
Positive	86 (86.0)
Negative	14 (14.0)
CD34[†]	
Positive	93 (93.9)
Negative	6 (6.1)
PDGFRα[†]	
Positive	84 (87.5)
Negative	12 (12.5)
α-SMA[†]	
Positive	40 (42.1)
Negative	55 (57.9)
Coexistence of GC	
Yes	12 (11.3)
No	94 (88.7)
Rupture[†]	
Yes	6 (5.7)
No	99 (94.3)
GI-bleeding[†]	
Yes	29 (29.3)
No	70 (70.7)
Tumor necrosis[†]	
Yes	26 (26.3)
No	73 (73.7)
Adjuvant imatinib[†]	
Yes	12 (11.3)
No	94 (88.7)

[†], partial data were missing.

Table S2 Univariate analysis of OS and DFS in 94 patients with gastric GISTs alone

ABO blood type	No. (%)	DFS		OS	
		Rate (%)	P	Rate (%)	P
A	33 (32.4)	75.8	0.03	81.8	0.008
Non-A (B/AB/O)	60 (67.6)	93.3		98.3	