**Figure Legends**

**Figure S1.** Genetic mutations in exon 12 of *PDGFRA*. Arrows indicated the sites of mutation.

**Figure S2.** Genetic mutations in exon 14 of *PDGFRA*. Arrows indicated the sites of mutation.

**Figure S3.** Genetic mutations in exon 18 of *PDGFRA*. Arrows indicated the sites of mutation.

**Figure S4.** Effects of imatinib and crenolanib on activation of mutational PDGFRA. Ba/F3 cells were transfected with *PDGFRA* cDNA encoding for D842V and D842Y, and positive cells were selected for G418 resistance and IL-3 independence. Ba/F3 cells were incubated with dissolvent, imatinib or crenolanib with different concentrations for 90 minutes. Whole cell lysates were extracted, and Western blotting was used to analyze the phosphorylation levels of immunoprecipitated PDGFRA. The experiments were repeated three times with similar results.