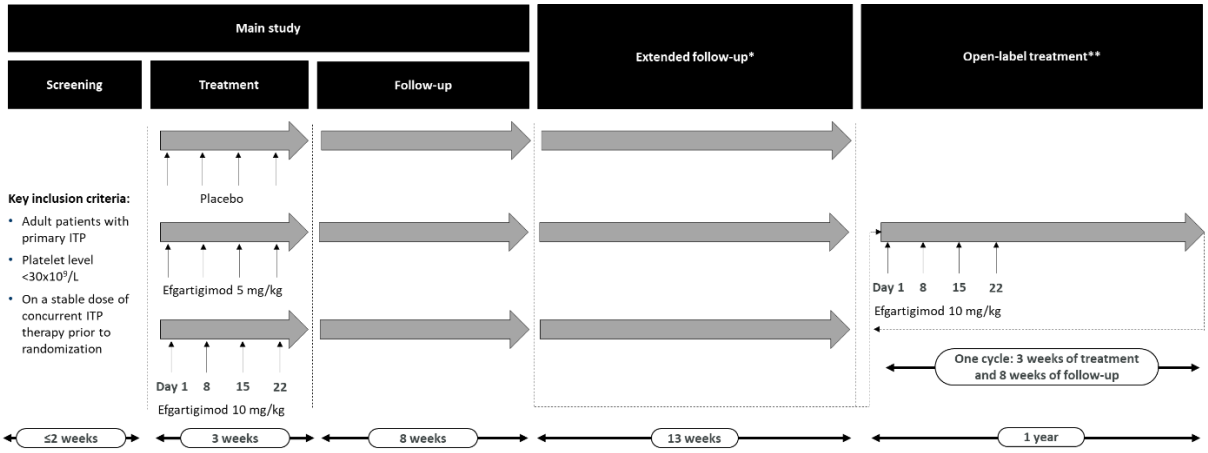
**Supplemental Table 1**: Patients achieving increasing platelet thresholds in the main study (screening, treatment, and follow-up) and extended follow-up periods, and in the first cycle of the open-label treatment period.

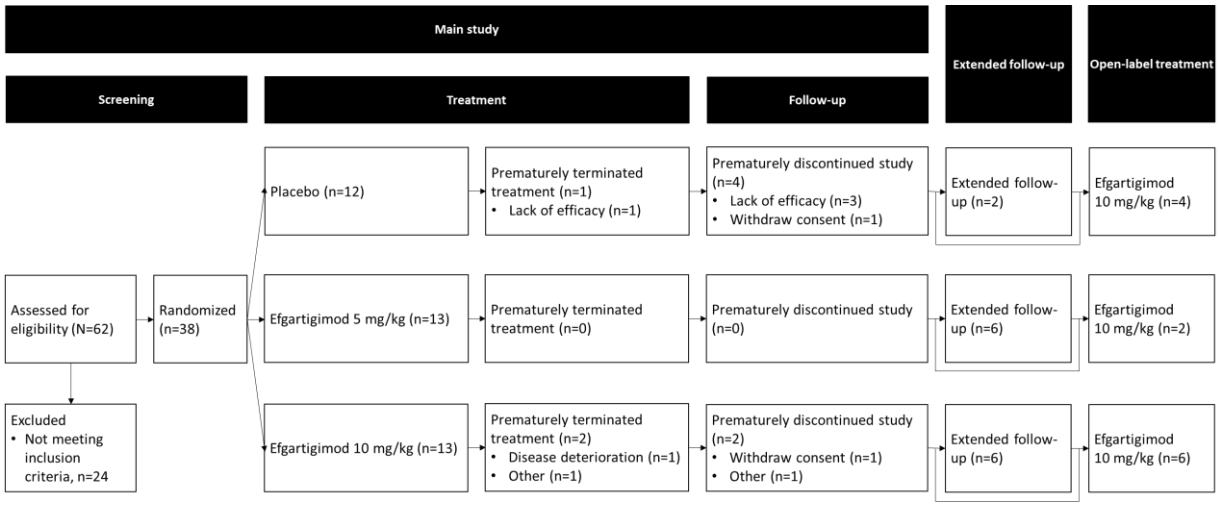
| Patient | Main study (screening, treatment, and follow-up) and extended follow-up periods | | | | | Open-label treatment period | | |
|---|---|---|---|---|---|---|---|---|
| | Dose | ≥50×10$^9$/L | ≥50×10$^9$/L for at least 2 occasions | ≥50×10$^9$/L for at least 10 cumulative days | Dose | ≥50×10$^9$/L | ≥50×10$^9$/L for at least 2 occasions | ≥50×10$^9$/L for at least 10 cumulative days |
| 1 | Placebo | | | | 10 mg/kg | X | X | X |
| 2 | | | | | | | | |
| 3 | | X | | | | X | X | X |
| 4 | | | | | | X | X | |
| 5 | 5 mg/kg | | | | | X | X | |
| 6 | | | | | | X | X | X |
| 7 | 10 mg/kg | X | X | X | | X | X | X |
| 8 | | X | | | | | | |
| 9 | | X | X | | | X | X | X |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | X | X | | | X | X | X |
| Total (N=12) | n (%) | 5 (41.7) | 3 (25.0) | 1 (8.3) | n (%) | 8 (66.7) | 8 (66.7) | 6 (50.0) |

N: number of patients in total, n: observed number of patients. Note: percentages are based on N.

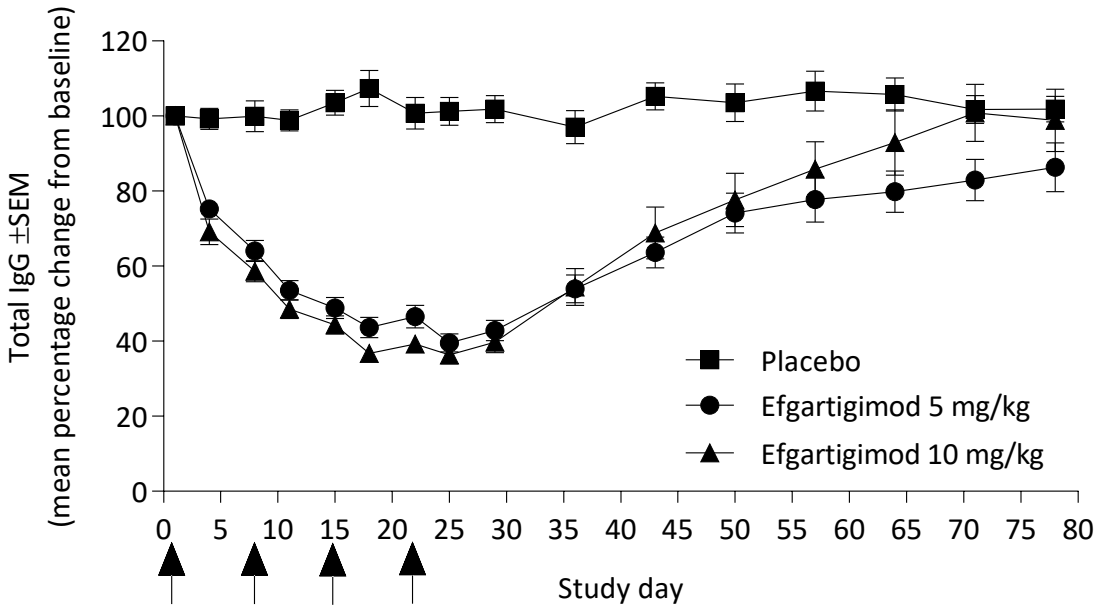



**Supplemental Figure 1. Trial design.** Patients were randomized 1:1:1 to receive 4 weekly doses (at days 1, 8, 15, and 22) of either placebo or efgartigimod at a dose of 5 mg/kg or 10 mg/kg body weight administered as an intravenous infusion. After amendment of the protocol, patients could enter the extended follow-up period (*) if they completed the follow-up period of the main study with a platelet count ≥30×10$^9$/L and/or at least doubling of the baseline platelet count in absence of bleeding, and remained on the same ITP therapies. After another amendment, patients could enter the open-label treatment period (**) to receive cycle(s) of 4 weekly intravenous infusions of efgartigimod 10 mg/kg, if during up to the 21 weeks of follow-up (i.e. 8 weeks follow-up plus up to 13 weeks of extended follow-up) they relapsed (platelet count <30×10$^9$/L) or their platelet counts had not reached 30×10$^9$/L in absence of bleeding. Patients could receive subsequent treatment cycles if they had reached the previously mentioned eligibility criteria, as well as having achieved at least double the platelet count, on two separate occasions, compared to platelet count on the day of the first infusion. Rescue therapy (defined as start of a new ITP therapy or increase in dose or dosing frequency of concurrent ITP therapy) was permitted during the study at the discretion of the investigator when deemed medically necessary.

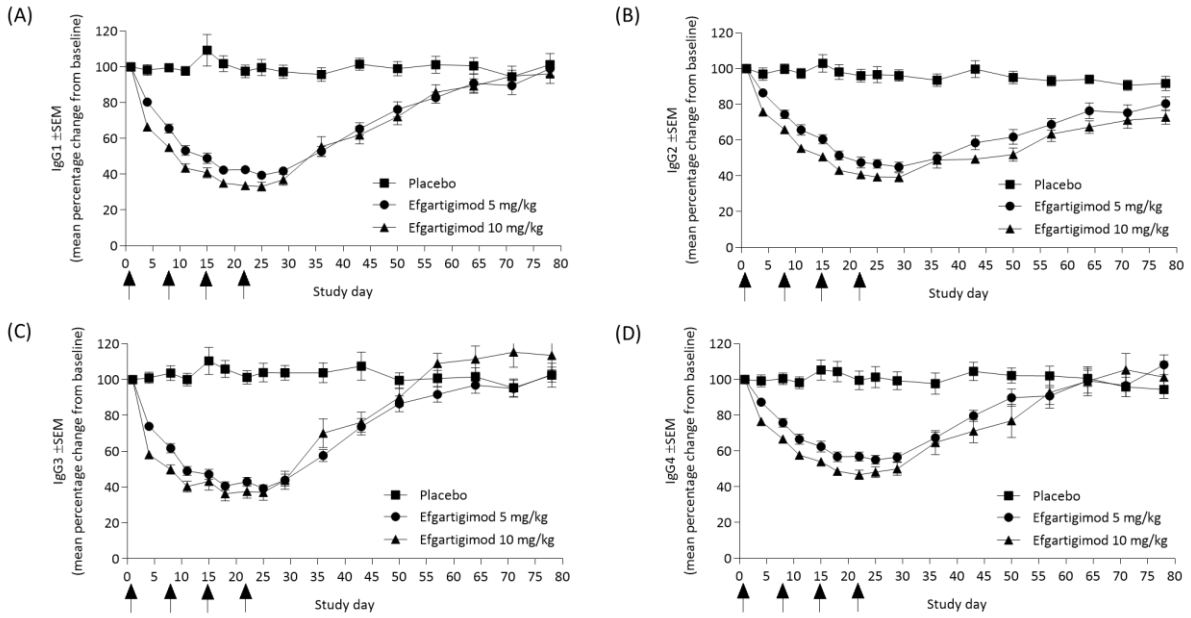
Patients receiving rescue therapy were discontinued from study drug and followed until the end of the study for safety. Arrows indicate timepoints of treatment administration.



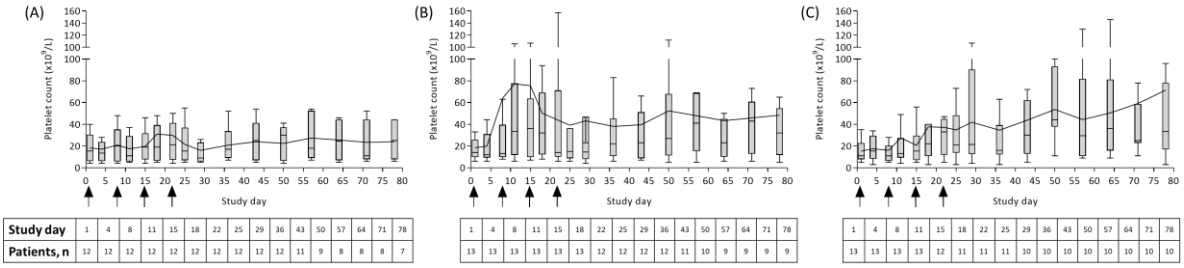

**Supplemental Figure 2. Flow diagram of patient disposition.** Most common reasons for screening failure included the use of prohibited medication, an active infection or a recent serious infection within 8 weeks prior to screening, and clinically significant laboratory abnormalities at screening.



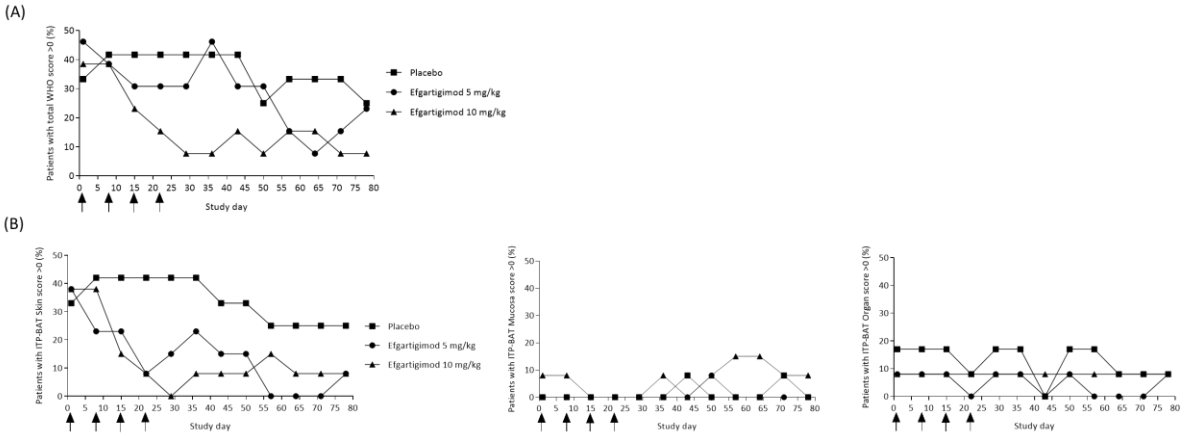

**Supplemental Figure 3. Mean percentage change from baseline (±SEM) of total IgG assessed per treatment group during the main study.** Patients receiving rescue medication were excluded from the analysis from the day of rescue. Arrows on the X-axis indicate time points of treatment administration.




**Supplemental Figure 4. Mean percentage change from baseline (±SEM) of IgG subtypes assessed during the main study.** (A) IgG1, (B) IgG2, (C) IgG3, and (D) IgG4. Patients receiving rescue medication were excluded from the analysis from the day of rescue. Arrows on the X-axis indicate time points of treatment administration.

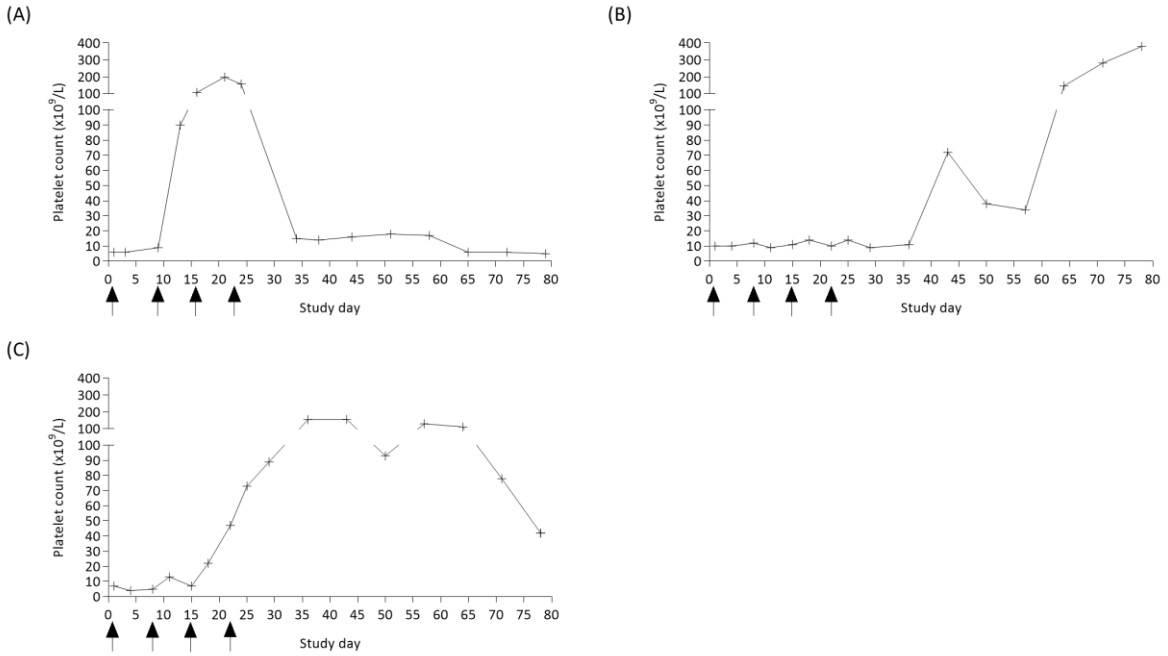



**Supplemental Figure 5. Distribution of platelet count levels by means of Tukey box-and-whiskers plots assessed per treatment group during the main study.** (A) Placebo, (B) efgartigimod 5 mg/kg, and (C) efgartigimod 10 mg/kg. The median is presented by the lines in the middle of the boxes and the mean by the connecting lines. Patients receiving rescue medication were excluded from the analysis from the day of rescue. Arrows on the X-axis indicate time points of treatment administration.




**Supplemental Figure 6. Percentage of patients with bleeding events during the main study assessed using the (A) WHO and (B) ITP-BAT scales.** Patients receiving rescue medication were

excluded from the analysis from the day of rescue. Arrows on the X-axis indicate time points of treatment administration.




**Supplemental Figure 7. Platelet counts in three individual patients assessed during the main study.** (A) Patient with chronic ITP with a low platelet count at baseline (<$10\times10^9$/L), receiving a thrombopoietin receptor agonist (75 mg of eltrombopag), and treated with efgartigimod 5 mg/kg. (B) Patient with chronic ITP with a low platelet count at baseline ($10\times10^9$/L), receiving a corticosteroid medication (100 mg of methylprednisolone), and treated with efgartigimod 10 mg/kg. (C) Patient with persistent ITP with a low platelet count at baseline (<$10\times10^9$/L) and treated with efgartigimod 10 mg/kg. Arrows on the X-axis indicate time points of treatment administration.