# SUPPLEMENTAL MATERIAL

**Data S1. Revascularization procedures**

As part of the standard institutional requirements, all surgeons had to have specialized in congenital or valve heart surgery for more than 3 years prior to undertaking any CABG procedures. With respect to off-pump CABG, the surgeon had to perform at least 100 on-pump CABG procedures before being considered qualified to carry out the off-pump procedure. Once qualified, the choice of off-pump CABG as opposed to on-pump CABG for a particular patient was generally at the discretion of the individual surgeons. Anesthesia was managed by inhalation of isoflurane with the addition of fentanyl or sufentanil, and propofol was administered continuously until the end of the procedure if necessary. Surgical revascularization was performed using standard bypass techniques. For on-pump CABG, a standard cardiopulmonary bypass was established, and moderate systemic hypothermia (28°C to 32°C) and perfusion with antegrade intermittent cold crystalloid cardioplegia were used. Heparin was given to achieve activated clotting times of 480 seconds or above before institution of cardiopulmonary bypass. For off-pump CABG, stabilization devices were used to provide a motionless anastomosis site, and heparin was administered before the start of the first distal anastomosis to achieve an activated clotting time of 300 to 350 seconds. On-pump CABG involved aortic cross-clamping and cardioplegic arrest, while off-pump CABG was performed with a partial occlusion clamp. Whenever possible, complete revascularization was attempted. And the internal thoracic artery was used preferentially for revascularization of the left anterior descending artery. The remaining vessels were to be bypassed either using another arterial conduit or the saphenous vein in the configuration decided by the surgeon. During reperfusion, the bypass grafting was completed with proximal anastomoses to the ascending aorta. The decision to switch to cardiopulmonary bypass during the procedure was based on significant

hemodynamic instability or ventricular arrhythmia. After separation from cardiopulmonary bypass or on completion of all anastomoses, protamine was given to reverse the effects of heparin. Postoperatively, starting within the first 24 hours, aspirin therapy (100 mg/d) is recommended and should be continued indefinitely.

**Outcome Definitions:**

***Death*** was defined as death from any cause.

***Myocardial infarction*** occurred when there were clinical signs and symptoms of ischemia that were distinct from the presenting ischemic event and meeting at least 1 of the following criteria:

1. Spontaneous (before or without revascularization, >48 h after CABG):

A. New, significant Q waves in at least 2 contiguous leads of an ECG that were not present with the presenting ischemic event;

B. Patients whose most recent cardiac markers measured before reinfarction, which were normal, require an increase in CK-MB or troponin that is above the $99^{th}$ percentile upper limit of normal and at least ≥20% above the most recent value.

2. Within 48 h after CABG:

A CABG-related MI was defined by elevation of cardiac biomarker values >10 times the 99th percentile upper reference limit in patients with normal baseline cardiac troponin values (≤99th percentile upper reference limit) plus either new pathological Q waves; new left bundle-branch block, angiographically documented new graft, or native coronary artery occlusion; or imaging evidence of new loss of viable myocardium or new regional wall motion abnormality.

***Stroke*** was confirmed by a neurologist on the basis of imaging studies and was defined as follows:

1. A focal neurologic deficit of central origin lasting >72 hours, or

2. A focal neurologic deficit of central origin lasting >24 hours, with imaging evidence of cerebral infarction or intracerebral hemorrhage, or

3. A non-focal encephalopathy lasting >24 hours with imaging evidence of cerebral infarction or hemorrhage adequate to account for the clinical state.

Retinal arterial ischemia or hemorrhage was included in the definition of stroke. ***Repeat revascularization*** was defined as any repeat CABG or percutaneous coronary intervention.

**Table S1.** Information of primers:

| Primer | Sequence(5'to3') |
|---|---|
| GPIA-F | AAATGTCTCCTCTGTTGAAGGTGG |
| GPIA-R | CAGCTGCCTTCTCAAAGTATTCAAG |
| GPIA-RT-F | TGTGGTGAGGACGGACTTTG |
| GPIA-RT-R | CATCAACCGGCAGGGAGAAT |
| GAPDH-RT-F | CTATAAATTGAGCCCGCAGCC |
| GAPDH-RT-R | GCCCAATACGACCAAATCCGT |

**Table S2. Genotype information and Hardy–Weinberg equilibrium tests for GPIA rs1126643**

| Cohort | CC (%) | CT (%) | TT (%) | Genotype value | MAF | p for HWE* |
|---|---|---|---|---|---|---|
| Discovery | 722 (46.8) | 692 (44.8) | 128 (8.3) | 99.87% | 0.31 | 0.034 |
| Replication | 294 (45.5) | 281 (43.5) | 65 (10.1) | 99.07% | 0.32 | 0.858 |

HWE: Hardy–Weinberg equilibrium.

**Table S3.** Candidate risk factors

| Risk factors | | |
|---|---|---|
| 1. Age* | 8. COPD* | 15. No. of disease arteries |
| 2. Sex* | 9. Peripheral atrial disease* | 16. Complete revascularization |
| 3. BMI* | 10. Chronic renal failure* | 17. Cardiopulmonary bypass |
| 4. Smoker* | 11. Previous MI* | 18. Blood transfusion |
| 5. Diabetes mellitus* | 12. Previous PCI* | |
| 6. Hyperlipidemia | 13. LVEF | |
| 7. Hypertension* | 14. Left main CAD | |

*These risk factors are adjusted in replication cohort.

**Table S4.** Baseline information of functional study cohort

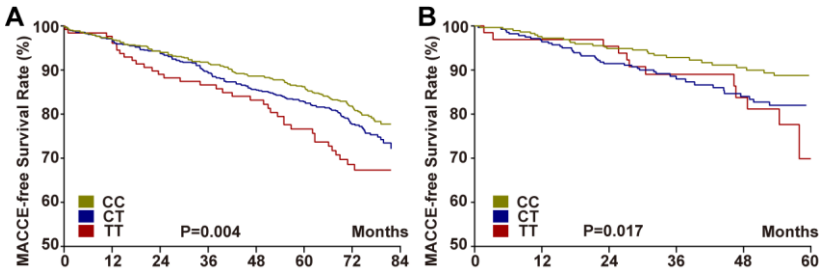
| Variable | All patients (n=131) | CC homozygotes (n=61) | T allele carriers (n=70) |
|---|---|---|---|
| **Demographics** | | | |
| Age (years) | 61.06 (±8.71) | 60.95 (±8.55) | 61.16 (±8.91) |
| Female sex | 26 (19.8) | 13 (21.3) | 13 (18.6) |
| BMI (kg/m$^2$) | 25.33 (±3.31) | 25.19 (±2.87) | 25.45 (±3.67) |
| **Medical history** | | | |
| Smokers | 33 (25.2) | 14 (23.0) | 19 (27.1) |
| Hypertension | 86 (65.6) | 39 (63.9) | 47 (67.1) |
| Hyperlipidemia | 89 (67.9) | 46 (75.4) | 43 (61.4) |
| Diabetes mellitus | 27 (20.6) | 9 (14.8) | 18 (25.7) |
| Renal dysfunction | 0 | 0 | 0 |
| COPD | 1 (0.8) | 0 | 1 (1.4) |
| Peripheral arterial disease | 7 (5.3) | 2 (3.3) | 5 (7.1) |
| Prior MI | 25 (19.1) | 11 (18.0) | 14 (20.0) |
| Prior PCI | 5 (3.8) | 2 (3.3) | 3 (4.3) |
| LVEF (%) | 59.89 (±9.02) | 59.33 (±8.24) | 60.37 (±9.69) |

Values are presented as numbers of patients or means ± SD; BMI: Body mass index;

COPD: Chronic obstructive pulmonary disease; LVEF: Left ventricular ejection fraction;

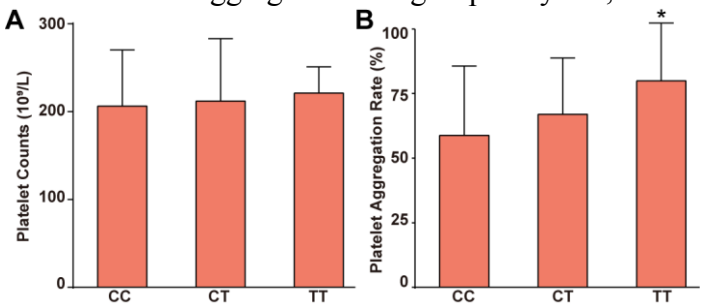
MI: myocardial infarction; PCI: percutaneous coronary intervention.

**Figure S1.** Kaplan-Meier survival curves of GPIA rs1126643 for discovery cohort and replication cohort grouped by CC, CT and TT genotypes.




**(A) Survival curve of GPIA rs1126643 for discovery cohort (grouped by CC, CT and TT genotypes). (B) Survival curve of GPIA rs1126643 for replication cohort (grouped by CC, CT and TT genotypes).** Patient with CC genotype has the highest MACCE-free survival rate, while the MACCE-free survival rate of CT genotype is medial and TT genotype is the lowest.

**Figure S2.** Platelet counts and aggregation rate grouped by CC, CT and TT genotypes.

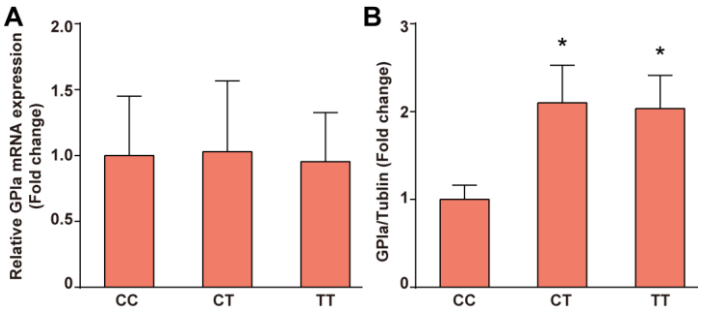



**(A) The platelet counts of patients** with CC genotype (206 ± 64 $\times 10^9$/L), CT genotype (212 ± 71 $\times 10^9$/L) and TT (221 ± 30 $\times 10^9$/L); p for one-way ANOVA is 0.80.

**(B) The platelet aggregation rate** of patients with CC genotype (58.8% ± 26.9%), CT genotype (67.0% ± 21.8%) and TT (80.0% ± 22.3%); p for one-way ANOVA is 0.038.

*$p<0.05$ compared to CC genotype.

**Figure S3.** GPIA mRNA and protein expression levels grouped by CC, CT and TT genotypes.




**(A) Relative GPIA mRNA levels of CC homozygotes and T allele carriers grouped by CC, CT and TT genotypes. (B) GPIA protein expression levels of CC homozygotes and T allele carriers grouped by CC, CT and TT genotypes;** *$p<0.05$ compared to CC genotype.