A potentially functional variant of *ARID1B* interacts with physical activity in association with risk of hepatocellular carcinoma

Supplementary Materials

**Supplementary Table 1: The association between the variables and HCC risk**

| Variables                | Crude OR (95% CI) | *P*  | Adjusted OR (95% CI)* | *P*  |
|--------------------------|-------------------|------|-----------------------|------|
| Smoking status           |                   |      |                       |      |
| Never                    | 1.00              |      | 1.00                  |      |
| Ever                     | 1.64 (1.30–2.08)  | < 0.001 | 1.54 (1.08–2.19)     | 0.011|
| Drinking status          |                   |      |                       |      |
| Never                    | 1.00              |      | 1.00                  |      |
| Ever                     | 1.58 (1.26–1.98)  | < 0.001 | 1.52 (1.11–2.08)     | 0.002|
| Physical activity status |                   |      |                       |      |
| Inactive                 | 1.00              |      | 1.00                  |      |
| Active                   | 0.63 (0.50–0.79)  | < 0.001 | 0.68 (0.51–0.91)     | 0.006|
| HBsAg status             |                   |      |                       |      |
| Negative                 | 1.00              |      | 1.00                  |      |
| Positive                 | 13.70 (10.39–18.07) | < 0.001 | 14.48 (10.77–19.47) | < 0.001|
| HCC family history       |                   |      |                       |      |
| No                       | 1.00              |      | 1.00                  |      |
| Yes                      | 4.15 (2.58–6.68)  | < 0.001 | 2.99 (1.71–5.23)     | < 0.001|

Abbreviations: HCC, hepatocellular carcinoma; OR, odds ratio; 95% CI, 95% confidence interval.

*ORs, 95% CI, and *P* values were calculated by the multivariate logistic regression models after adjusting for sex, age, smoking and drinking status, physical activity, HBsAg status, family history of HCC.
### Supplementary Table 2: The functional annotation information for the genetic variants in *ARID1B*

| Genetic variants | Alleles | Location in gene | MAF in CHB | P for HWE | Conversation | Promoter histone marks | Enhancer histone marks | DNAse | Proteins bound | Motifs changed |
|------------------|---------|------------------|------------|----------|--------------|------------------------|------------------------|-------|----------------|----------------|
| rs73013281       | C/T     | 5' near gene     | 0.175      | 0.101    | Yes          | 24 tissue             | 14 tissues             | 52 tissues | 4 bound proteins | EBF-known2     |
| rs167007         | A/G     | Intron           | 0.070      | 0.952    | No           | --                    | 3 tissue              | --     | --             | NRSF-disc5     |
| rs9397984        | C/T     | Intron           | 0.075      | 0.872    | No           | --                    | 7 tissues             | --     | --             | 5 altered motifs |

Abbreviations: CHB, Chinese Han population in Beijing; HWE, Hardy-Weinberg equilibrium; MAF, minor allele frequency.

### Supplementary Table 3: Genetic association between the haplotypes of three variants in *ARID1B* and HCC risk

| Haplotypes | Cases (%) N = 1222 | Controls (%) N = 1228 | χ²   | P      | OR (95%CI) |
|------------|---------------------|------------------------|------|--------|------------|
| TGT        | 797 (65.2)          | 766 (62.4)             | 3.58 | 0.310  | 1.00       |
| CGT        | 329 (26.9)          | 367 (29.9)             | 0.86 | 0.36   | 0.86 (0.72–1.03) |
| TAC        | 78 (6.4)            | 82 (6.7)               | 0.91 | 0.36   | 0.66 (0.66–1.27) |
| others     | 18 (1.5)            | 13 (1.1)               | —    | —      | —          |

Abbreviations: HCC, hepatocellular carcinoma; OR, odds ratio; 95% CI, 95% confidence interval.

*a* The Haplotypes were constructed from the genotypes data of the variants arranged in the order of rs73013281, rs167007, and rs9397984.