**Supplementary Table S1.** The primer sequences for RT-qPCR.

| Gene    | Forward 5'→3'               | Reverse 5'→3'               |
|---------|-----------------------------|-----------------------------|
| CAST    | TACAGGAAGTAACGATGCTCACA     | CACCCGGGTTGCCAGATATT        |
| LDHA    | TTGACCTACGTGGCTTGGAAG       | GGTAACGGAATCGGGCTGAAT       |
| IMUP    | GTCCGGGTCCAAGCAAGG          | GTGGGACTTCACATCCGTGT        |
| CD9     | CCTGCTGTTCGGATTTAACTTCA     | TGGTCTGAGAGTCGAATCGGA       |
| MET     | AGCAATGGGGAGTGAAAGG         | CCCAGTCTTTGTACTCAGCAAC      |
| TNFRSF21| ATTGGCACATACCAGCCATGTT      | GGCTTGTGTTGGTACAATGCTC      |
| β-actin | CCAACCGCGAGAGATGA           | CCAGAGCGGTACAGGGATAG        |
**Supplementary Table S2.** Logistic equation coefficient for 1-, 2-, and 3-year death risk prediction.

| Death risk | Equation coefficient of logistic                                      |
|------------|-----------------------------------------------------------------------|
| 1-year     | age × 0.034 + IMUP × 0.001 + LDHA × 0.003 + MET × 0.007 - 5.504       |
| 2-year     | * age × 0.064 + MET × 0.014 + LDHA × 0.001 + TNFRSF21 × 0.003 - CD9 × 0.001 - CAST × 0.003 - 4.849  |
|            | # age × 0.063 + MET × 0.015 + TNFRSF21 × 0.003 - 4.819               |
| 3-year     | * age × 0.080 + MET × 0.032 + LDHA × 0.001 - TNFRSF21 × 0.001+ IMUP × 0.001 - CAST × 0.009 - 5.422 |
|            | # = age × 0.082 + MET × 0.032 + TNFRSF21 × 0.00 - 5.543              |

*, # representative logistic equation coefficient for 1-, 2-, and 3-year death risk prediction. The gene name refers to the gene expression quantity. IMUP, immortalization upregulated protein; LDHA, lactate dehydrogenase A; MET, tyrosine kinase receptor; TNFRSF21, tumor necrosis factor receptor superfamily member 21; CAST, calpastatin.