

**Table S2.**  $L_9(3^4)$  orthogonal experimental design for grape seed germination optimization.

| Treatment | GA <sub>3</sub> concentration (g/L) | Soaking duration (h) | Incubation temperature (°C) |
|-----------|-------------------------------------|----------------------|-----------------------------|
| T1        | 0.1                                 | 24                   | 20                          |
| T2        | 0.1                                 | 36                   | 25                          |
| T3        | 0.1                                 | 48                   | 30                          |
| T4        | 0.2                                 | 24                   | 25                          |
| T5        | 0.2                                 | 36                   | 30                          |
| T6        | 0.2                                 | 48                   | 20                          |
| T7        | 0.3                                 | 24                   | 25                          |
| T8        | 0.3                                 | 36                   | 20                          |
| T9        | 0.3                                 | 48                   | 30                          |