**Table S3.** The survival of hydrated seeds during the cooling process

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Treatment | -14℃ | -16℃ | -19 ℃ |  | Treatment | -10 ℃ | -14℃ | -15℃ |
| Control-1 | 1 | 0 | 0 |  | 2-Bp-1 | 1 | 2 | 6 |
| Control-2 | 5 | 0 | 0 |  | 2-Bp-2 | 1 | 6 | 2 |
| Control-3 | 2 | 0 | 0 |  | 2-Bp-3 | 3 | 0 | 1 |

Note: The hydrated seeds were cooled with slow cooling (-3 °C h-1 ) treatment. During the process, seeds were taken out at above temperatures which were after the temperature of peaks detected by DSC, separately. Control : Control imbibition; 2-Bp: 2-Bp imbibition. Each treatment has three repeats with 25 seeds each.