



**Figure S1** Schematic summary of the main findings of this research. Under a cell suspension system, optimal subcultivation time is found at 15 days of cultivation with high increment in fresh weight and mitosis rate. Cells during the linear-exponential transition express stress-related proteins (heat shock, calmodulin-like-2, and chaperonin proteins), lower mitosis rates and introduction of cell death in the stationary phase. Presence of pectins and mucilage is found in the suspensor cells providing cell-cell adhesion. Crucial meristematic organization proteins are expressed, as well as cell growth/division proteins. Auxin-related proteins are also expressed showing their essential role in the PEM III-to early embryo transition. Overall, this study integrated proteomics with histochemical analysis to gain more insight into the molecular mechanism of somatic embryo formation during cell suspension