

| Ingredient                                            | Molecular Weight (g/mol) | Liquid Concentrations (mM/L) | Hoagland Liquid Concentrations (mM/L) |
|-------------------------------------------------------|--------------------------|------------------------------|---------------------------------------|
| K <sub>2</sub> SO <sub>4</sub>                        | 174.26                   | 150                          | 0.75                                  |
| MgSO <sub>4</sub> · 7H <sub>2</sub> O                 | 246.47                   | 130                          | 0.65                                  |
| H <sub>3</sub> BO <sub>4</sub>                        | 61.83                    | 1                            | 1x10 <sup>-3</sup>                    |
| MnSO <sub>4</sub> · H <sub>2</sub> O                  | 169.01                   | 1                            | 1x10                                  |
| CuSO <sub>4</sub> · 5H <sub>2</sub> O                 | 249.68                   | 0.1                          | 1x10 <sup>-4</sup>                    |
| ZnSO <sub>4</sub> · 7H <sub>2</sub> O                 | 287.54                   | 1                            | 1x10 <sup>-3</sup>                    |
| Ca(NO <sub>3</sub> ) <sub>2</sub> · 4H <sub>2</sub> O | 236.15                   | 1000                         | 2                                     |
| Fe-EDTA                                               | 367.05                   | 100                          | 0.2                                   |
| KH <sub>2</sub> PO <sub>4</sub>                       | 136.09                   | 150                          | 0.15                                  |
| KCl                                                   | 74.55                    | 100                          | 100                                   |

Table S2 Hoagland liquid medium formula