**Table S1 Pearson correlation between population growth of *Nannochloropsis* sp. at**

**the treatment of variations in the addition of CO2 and physical and chemical parameters of culture**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CO2 Concentration Addition** | **Physico-chemical Parameters** | | | | |
| **NH4+** | **NH3−** | **NO2−** | **PO43−** | **pH** |
| **0%** | 0.819 | 0.782 | 0.882\* | −0.898 | 0.54 |
| **2%** | 0.644 | 0.75 | 0.818 | −0.709 | −0.227 |
| **4%** | −0.669 | −0.247 | −0.604 | 0.636 | −0.137 |
| **6%** | −0.854 | −0.464 | −0.701 | 0.841 | −0.121 |
| **8%** | −0.896 | −0.803 | −0.834 | 0.792 | 0.451 |

(\*) significant correlation at the level 0.05

(\*\*) significant correlation at the level 0.01

**Table S2 Correlation of Pearson between population growth of *Nannochloropsis* sp. in the treatment of flashing light variations and Physico-chemical parameters of culture**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Flashing Light** | **Physico-chemical Parameters** | | | | | | | |
| **NH4+** | **NH3−** | **NO2−** | **PO43−** | **CO2** | **O2** | **pH (light)** | **pH (dark)** |
| **Control (Natural)** | 0.571 | 0.489 | 0.59 | 0.105 | −0.782 | 0.793 | 0.337 | 0.431 |
| **P1 (0.75:0.25 h)** | 0.395 | 0.022 | 0.797 | 0.407 | −0.920\*\* | 0.362 | 0.743\*\* | 0.839\*\* |
| **P2 (0.5:0.5 h)** | 0.706 | −0.181 | 0.726 | 0.513 | −0.935\*\* | 0.871\* | 0.766\*\* | 0.839\*\* |
| **P3 (0.25:0.75 h)** | −0.394 | −0.911\* | −0.81 | −0.66 | 0.766 | −0.434 | −0.172 | −0.176 |

(\*) significant correlation at the level 0.05

(\*\*) significant correlation at the level 0.01