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**PFC OP 03**

# *Arthrospira platensis* and *Porphyra sp.* – prospective serum-substitute in HEK293T cell culture

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Both *Arthrospira platensis* (Spirulina) and *Porphyra sp.* (Nori) are algae known for their richness in vitamins, minerals, antioxidants, proteins, such as phycobiliproteins (PBPs). Thanks to their exceptional nutritional properties they have potential to be considered as a high-quality substitute for fetal bovine serum (FBS) in cellular cultivation, which has numerous drawbacks since it can be involved in contamination development and its composition is still unclear. In this study we investigated the influence of Spirulina and Nori extracts on HEK293T cell line growth and viability in serum-reduced conditions. In DMEM/F12 medium supplemented with 0–10% FBS, the concentration-dependent effects of PBPs on cell proliferation were investigated. Cell viability and cytotoxicity were evaluated by MTT assay. During 3-day observation prior to MTT assay and MTT assay itself showed that HEK293T exhibited improvement in viability at lower PBP concentrations, while presence of higher concentrations resulted in inhibition of growth and change in morphology as a consequence of their cytotoxicity at higher concentrations. These findings suggest that PBPs have a positive outcome on cell growth at relevant doses. In general, in this study were obtained results proving the potential advantages of PBPs at lower doses on cell proliferation in serum-reduced conditions, but also HEK293T cells ability to adapt in non-standard cultivation set-up.

**References**

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