Freshwater Cyanobacteria

Note: The culturing conditions below are not necessarily the optimal growth conditions for each strain, as much variation is found between strains, and cultures are not always kept in optimal growth conditions at CCAP for practical reasons. There may be more info in the individual strain data on the website.

Storing the cultures in natural daylight at room temperature should also be fine, providing they are kept out of direct sunlight.

On receipt of culture: cultures should be subcultured into fresh sterile medium as described below, ideally within a few days of receipt. If the culture vessel is very full on receipt and subculturing cannot be done immediately, we advise transferring half of the culture to a sterile container to provide air space. Cultures on agar do not need subculturing immediately, and any culture remaining on the slope after subculturing will continue to grow.

ACDP Hazard Gp: 1 - Non pathogenic / non hazardous. Unlikely to cause human disease.

Culture Medium: Generally BG11 or JM. Strains that form heterocysts can be grown in $BG11_0$
Media recipes can be found on our website: www.ccap.ac.uk/index.php/media-recipes/

Lighting: Mix of cool and warm white fluorescent lighting; Slightly shaded - cyanobacteria may bleach if exposed to bright lighting. Light meter readings around our cyanobacteria cultures range from 151-216 Lux.

Light Cycle: 12h light : 12h dark (for faster growth try 16h:8h)

Temperature: 15-20 degrees C (for faster growth, grow at 20-25 degrees C)

Sub Interval: 2 months (may vary depending on environment)

Culture Vessel: Glass tubes containing approx. 9ml culture; or glass flasks.

Culture Method:

Liquid cultures:

Subculture by inoculating culture into fresh sterile medium in the ratio of 1:10, e.g. 5mls culture into no more than 50mls medium. Note that if the culture is not dense, not in optimal condition or bacteria are obvious then 1:5 may be necessary. Cyanobacteria, especially single celled strains, prefer not to be too dilute in our experience. Culture can be transferred by pouring or pipetting.

Agar/solid cultures:

Use a sterile loop to collect cells from the existing culture and draw the loop over the fresh agar being careful not to break the surface.

Use strict aseptic techniques throughout and if possible carry out all subculturing within a laminar flow cabinet.