



Riferimenti:

1)	https://www.marinespecies.org/hab/
2)	Strunecký O, Ivanova AP, Mareš J. <i>An updated classification of cyanobacterial orders and families based on phylogenomic and polyphasic analysis</i> . J Phycol. 2023 Feb;59(1):12-51. doi: 10.1111/jpy.13304. Epub 2023 Jan 13. Erratum in: J Phycol. 2023 Jun;59(3):635. doi: 10.1111/jpy.13355. PMID: 36443823. https://doi.org/10.1111/jpy.13304

Phylum: Cyanobacteriophyta

Classe: Cyanophyceae

Ordine	Famiglia	specie	tossine prodotte	
Chroococcales	Geminocystaceae	<i>Annamia toxica</i>	MCs	
Chroococcales	Microcystaceae (P)	<i>Aphanocapsa cumulus</i>	MCs	
Chroococcales	Microcystaceae (P)	<i>Aphanocapsa delicatissima</i>	Nod?	
Chroococcales	Microcystaceae (P)	<i>Aphanocapsa incerta</i>	Nod?	
Chroococcales	Microcystaceae (P)	<i>Cyanocatena imperfecta</i> (ex <i>Cyanodictyon imperfectum</i>)	Nod?	
Chroococcales	Microcystaceae	<i>Merismopedia tenuissima</i>	Nod?	
Chroococcales	Microcystaceae	<i>Microcystis aeruginosa</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis bengalensis</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis botrys</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis flos-aquae</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis ichthyoblabe</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis novacekii</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis viridis</i>	MCs	
Chroococcales	Microcystaceae	<i>Microcystis wesenbergii</i>	MCs	
Chroococcales	Microcystaceae (P)	<i>Radiocystis fernandoi</i>	MCs	
Chroococcales	Microcystaceae	<i>Snowella lacustris</i>	?	
Chroococcales	Microcystaceae	<i>Synechocystis aquatilis</i>	MC-LR	
Chroococcales	Microcystaceae	<i>Woronichinia naegeliana</i> (ex <i>Coelosphaerium naegelianum</i>)	MCs	
Chroococcales	Pleurocapsaceae	<i>Odorella benthonica</i>	Multiple toxins*	
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Anathece stratus</i> (ex <i>Aphanothece stratus</i>)	Nod
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Cyanobium bacillare</i> (ex <i>Synechococcus bacillaris</i>)	MCs
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Cyanobium rubescens</i> (ex <i>Synechococcus rubescens</i>)	MC
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Prochlorococcus marinus</i>	BMAA
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Anathece stratus</i> (ex <i>Aphanothece stratus</i>)	Nod
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Cyanobium bacillare</i> (ex <i>Synechococcus bacillaris</i>)	MCs
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Cyanobium rubescens</i> (ex <i>Synechococcus rubescens</i>)	MC
ex Chroococcales	Synechococcales	Prochlorococcaceae	<i>Prochlorococcus marinus</i>	BMAA

	Synechoccales	Synechococcaceae	<i>Synechococcus nidulans</i> (ex <i>Lauterbornia nidulans</i>)	MCs
	Synechoccales	Synechococcaceae	<i>Synechococcus nidulans</i> (ex <i>Lauterbornia nidulans</i>)	MCs
	Thermostichales	Thermostichaceae	<i>Thermostichus lividus</i> (ex <i>Synechococcus lividus</i>)	MCs
	Oscillatoriales	Aerosakkonemataceae	<i>Microseira wollei</i> (ex <i>Plectonema wollei</i>)	CYN, deoxy-CYN, STXs
	Oscillatoriales	Microcoleaceae (P)	<i>Blennothrix lyngbyacea</i>	Homo-antx-a
	Oscillatoriales	Microcoleaceae	<i>Kamptonema formosum</i> (ex <i>Oscillatoria formosa</i>)	Homo-antx-a
	Oscillatoriales	Microcoleaceae (P)	<i>Leibleinia gracilis</i>	Debromoaplysiatoxin
	Oscillatoriales	Microcoleaceae	<i>Limnoraphis robusta</i> (ex <i>Lyngbya hieronymusii</i> f. <i>robusta</i>)	STXs, CYN
	Oscillatoriales	Microcoleaceae	<i>Limnospira fusiformis</i> (ex <i>Spirulina fusiformis</i>)	MCs, Antx-a
	Oscillatoriales	Microcoleaceae (P)	<i>Lyngbya majuscula</i>	Lyngbyatoxin, Aplysiatoxin & debromoaplysiatoxin
	Oscillatoriales	Microcoleaceae	<i>Microcoleus autumnalis</i> (ex <i>Phormidium autumnale</i>)	Antx-a, Homo-antx, CYN, MC, STXs
	Oscillatoriales	Microcoleaceae	<i>Microcoleus favosus</i> (ex <i>Phormidium favosus</i>)	Antx-a
	Oscillatoriales	Microcoleaceae	<i>Planktothrix agardhii</i> (ex <i>Oscillatoria agardii</i>)	MCs
	Oscillatoriales	Microcoleaceae	<i>Planktothrix prolifica</i> (ex <i>Oscillatoria prolifica</i>)	MCs
	Oscillatoriales	Microcoleaceae	<i>Planktothrix rubescens</i> (ex <i>Oscillatoria rubescens</i>)	MCs
	Oscillatoriales	Microcoleaceae	<i>Trichodesmium erythraeum</i>	MCs, STXs, PITXs, CTX-like
	Oscillatoriales	Microcoleaceae	<i>Trichodesmium thiebautii</i>	Trichotoxins
	Oscillatoriales	Microcoleaceae (P)	<i>Tychonema bourrellyi</i> (ex <i>Oscillatoria bourrellyi</i>)	Antx-a
	Oscillatoriales	Oscillatoriaceae	<i>Oscillatoria limosa</i>	MCs
	Oscillatoriales	Oscillatoriaceae	<i>Oscillatoria tenuis</i>	MCs
	Oscillatoriales	Oscillatoriaceae (P)	<i>Phormidium corium</i>	MCs
	Oscillatoriales	Oscillatoriaceae (P)	<i>Phormidium uncinatum</i>	STX (variante della GTX1)
ex Oscillatoriales	Pseudanabaenales	Pseudanabaneaceae	<i>Limnothrix redekei</i> (ex <i>Oscillatoria redekei</i>)	MCs, STXs
	Pseudanabaenales	Pseudanabaneaceae	<i>Pseudanabaena limnetica</i> (ex <i>Oscillatoria limnetica</i>)	Antx-a
	Pseudanabaenales	Pseudanabaneaceae	<i>Pseudanabaena suomiensis</i>	MCs
	Pseudanabaenales	Pseudanabaneaceae	<i>Pseudanabaena vesniana</i>	MCs
	Coleofasciculales	Coleofasciculaceae	<i>Moorena producens</i>	Lyngbiatoxin
	Coleofasciculales	Wilmottiaceae (P)	<i>Anagnostidinema amphibium</i> (ex <i>Oscillatoria amphiba</i>)	PST (GTX4)
	Coleofasciculales	Wilmottiaceae (P)	<i>Anagnostidinema carotinosum</i> (ex <i>Geitlerinema carotinosum</i>)	MCs, Antx-a
	Coleofasciculales	Wilmottiaceae (P)	<i>Anagnostidinema lemmermannii</i> (ex <i>Oscillatoria lemmermannii</i>)	PST (GTX1)
	Leptolyngbyales	Leptolyngbyales	<i>Leptolyngbya boryana</i>	MCs
	Leptolyngbyales	Leptolyngbyales	<i>Leptolyngbya tenuis</i>	?
	Leptolyngbyales	Neosynechococaceae	<i>Geitlerinema splendidum</i> (ex <i>Oscillatoria splendida</i>)	MCs
	Nodosilineales	Cymatolegaceae (P)	<i>Cyanodictyon planctonicum</i>	Nod?

Heterocytous Genera

Nodosilineales	Cymatolegaceae (P)	<i>Romeria caruaru</i>	MCs
Nostocales	Aphanizomenonaceae	<i>Anabaena cylindrica</i>	MCs
Nostocales	Aphanizomenonaceae	<i>Anabaena lapponica</i>	CYN
Nostocales	Aphanizomenonaceae	<i>Aphanizomenon flos-aquae</i>	Antx-a; STXs (GTX4, GTX1, GTX3 and C toxins)
Nostocales	Aphanizomenonaceae	<i>Aphanizomenon gracile</i>	STXs
Nostocales	Aphanizomenonaceae	<i>Cuspidothrix issatschenkoi</i> (ex <i>Anabaena issatschenkoi</i>)	Antx-a
Nostocales	Aphanizomenonaceae	<i>Cylindrospermum stagnale</i>	STXs (STX, neoSTX, dcSTX, and GTX1)
Nostocales	Aphanizomenonaceae	<i>Dolichospermum circinale</i> (ex <i>Anabaena circinalis</i>)	Antx-a; STXs
Nostocales	Aphanizomenonaceae	<i>Dolichospermum flos-aquae</i> (ex <i>Anabaena flos-aquae</i>)	Antx-a
Nostocales	Aphanizomenonaceae	<i>Dolichospermum lemmermannii</i> (ex <i>Anabaena lummermannii</i>)	Antx-a; MCs
Nostocales	Aphanizomenonaceae	<i>Dolichospermum macrosporum</i> (ex <i>Anabaena macrospora</i>)	Antx-a
Nostocales	Aphanizomenonaceae	<i>Dolichospermum mendotae</i> (ex <i>Anabaena mendotae</i>)	CYN
Nostocales	Aphanizomenonaceae	<i>Dolichospermum planctonicum</i> (ex <i>Anabaena planctonica</i>)	Antx-a; CYN
Nostocales	Aphanizomenonaceae	<i>Dolichospermum sigmoideum</i> (ex <i>Anabaena sigmoidea</i>)	Antx-a
Nostocales	Aphanizomenonaceae	<i>Dolichospermum spiroides</i> (ex <i>Anabaena spiroides</i>)	Antx-a
Nostocales	Aphanizomenonaceae	<i>Gloeotrichia echinulata</i>	MC-LR
Nostocales	Aphanizomenonaceae	<i>Raphidiopsis brookii</i>	STXs
Nostocales	Aphanizomenonaceae	<i>Raphidiopsis curvata</i>	CYN
Nostocales	Aphanizomenonaceae	<i>Raphidiopsis mediterranea</i>	Antx-a; CYN
Nostocales	Aphanizomenonaceae	<i>Raphidiopsis raciborskii</i> (ex <i>Anabaena raciborskii</i> ; <i>Cylindrospermopsis raciborskii</i>)	?
Nostocales	Aphanizomenonaceae	<i>Sphaerospermopsis torques-reginae</i> (ex <i>Anabaena torquesreginae</i>)	Spumigin
Nostocales	Aphanizomenonaceae	<i>Trichormus variabilis</i> (ex <i>Anabaena variabilis</i>)	MC
Nostocales	Aphanizomenonaceae	<i>Okeanomitos corallinicola</i>	MCs
Nostocales	Hapalosiphonaceae	<i>Fischerella major</i>	MCs; Nod; STXs
Nostocales	Hapalosiphonaceae	<i>Hapalosiphon hibernicus</i>	PSTs (C toxins, dcSTX, GTX2, GTX3, GTX5, STX and uncharacterised PSTs)
Nostocales	Hapalosiphonaceae	<i>Neowestiellopsis persica</i>	MC
Nostocales	Heteroscytonemataceae	<i>Heteroscytonema crispum</i> (ex <i>Scytonema crispum</i>)	PSTs (C toxins, dcSTX, GTX2, GTX3, GTX5, STX and uncharacterised PSTs)

Nostocales	Nodulariaceae	<i>Aliinostoc bakau</i>	MC-LR, MC-YR, MC-RR
Nostocales	Nodulariaceae	<i>Anabaenopsis arnoldii</i> (ex <i>Anabaenopsis circularis</i>)	MCs (MC-RR, MC-YR, and 2 unidentified MCs)
Nostocales	Nodulariaceae	<i>Anabaenopsis milleri</i>	MCs
Nostocales	Nodulariaceae	<i>Chrysochlorum bergii</i> (ex <i>Anabaena bergii</i> ; <i>Aphanizomenon bergii</i>)	CYN
Nostocales	Nodulariaceae	<i>Chrysochlorum ovalisporum</i> (ex <i>Aphanizomenon bergii</i>)	CYN
Nostocales	Nodulariaceae	<i>Nodularia sphaerocarpa</i>	Nod
Nostocales	Nodulariaceae	<i>Nodularia spumigena</i>	Nod
Nostocales	Nodulariaceae	<i>Umezakia ovalisporum</i> (ex <i>Aphanizomenon ovalisporum</i>)	CYN
Nostocales	Nodulariaceae	<i>Kaarinaea lacus</i>	MCs; nostophycin
Nostocales	Nostocaceae	<i>Desmonostoc muscorum</i> (ex <i>Nostoc muscorum</i>)	MCs
Nostocales	Nostocaceae	<i>Nostoc carneum</i>	MC
Nostocales	Scytonemataceae	<i>Aetokthonos hydrillicola</i>	AETX
Nostocales	Scytonemataceae	<i>Iningainema pulvinus</i>	Nod
Nostocales	Rivulariaceae (P)	<i>Calothrix parietina</i>	MCs
Nostocales	Rivulariaceae	<i>Rivularia biasoletiana</i>	MC
Nostocales	Rivulariaceae	<i>Rivularia haematites</i>	MC
Nostocales	Tolypothrichaceae	<i>Tolypothrix distorta</i>	MC

(P) = classificazione provvisoria

(*) = 3 anabaenopeptins, 2 aeruginosin-spumigens, aurilide A, coibacin A, 2 cyanopeptins, dragonamide C, 2 dolastatins, 2 hantupeptins, lyngbyaloside-PCS C2, 6 microcyclamides, 11 MCs