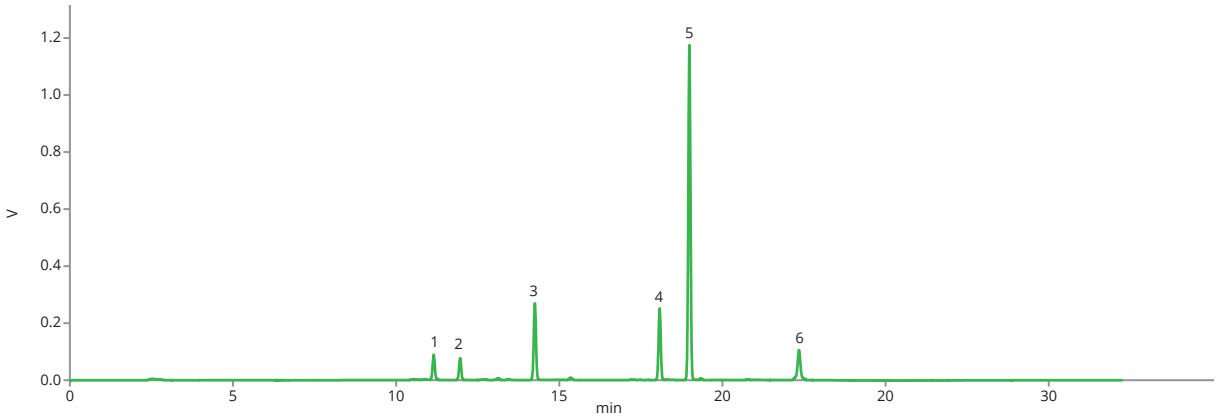
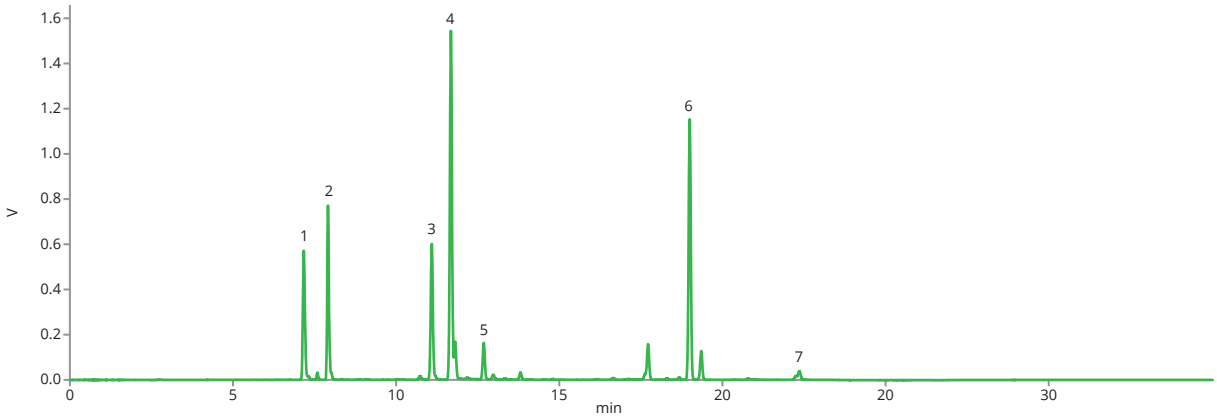
Photosynthetic pigments

This application shows the method of analysis of the main photosynthetics pigments in extracts of Hibiscus leaves and extract from cells of the algae Emiliania huxleyi. ASTRA® C18-HE column allows to achieve good separation of the pigments, which is always challenging.



Analysis of the extract of Hibiscus leaves on ASTRA® C18-HE column



Analysis of the extract of Emiliania huxleyi algae cells on ASTRA® C18-HE column

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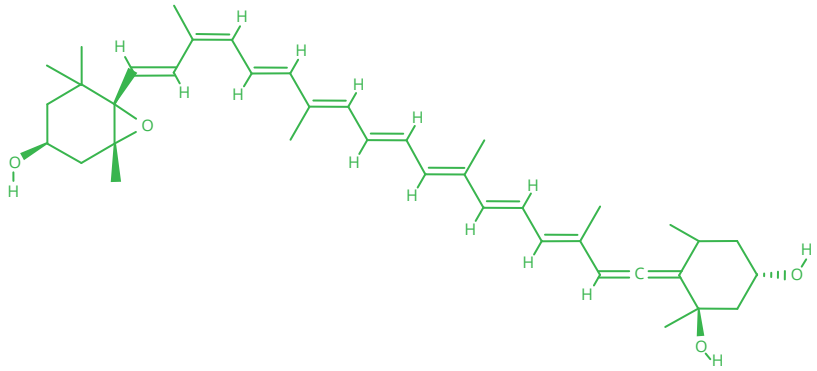
Photosynthetic pigments

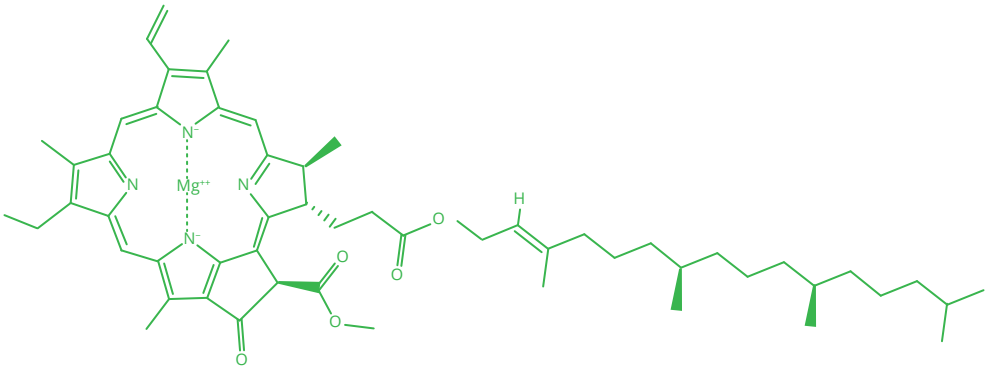
Column	ASTRA® C18, 5 µm			
Dimensions	250 mm × 4.6 mm			
Part number	AST-5732-LM46			
Mobile phase	A: methanol : 0.5M ammonium acetate 80/20 (v/v) B: ACN : water 90/10 (v/v) C: ethyl acetate			
Gradient elution	**Time**	**A (%)**	**B (%)**	**C (%)**
	0	100	0	0
	4	0	100	0
	18	0	20	80
	20	0	20	80
Temperature	30 °C			
Max. pressure	145 bar			
Detection	UV at 435 nm			
Analytes	**Hibiscus extract:** **1. Neoxanthin, CAS No. 14660-91-4** **2. Violaxanthin, CAS No. 126-29-4** **3. Lutein, CAS No. 127-40-2** **4. Chlorophyll b, CAS No. 519-62-0** **5. Chlorophyll a, CAS No. 479-61-8** **6. β-carotene, CAS No. 7235-40-7** **Emiliania huxleyi extract:** **1. Chlorophyll c2, CAS No. 27736-03-4** **2. Chlorophyll c3, CAS No. 111308-93-1** **3. Fucoxanthin, CAS No. 3351-86-8** **4. 19'-Hexanoyloxyfucoxanthin, CAS No. 60147-85-5** **5. Diadinoxanthin, CAS No. 18457-54-0** **6. Chlorophyll a, CAS No. 479-61-8** **7. β-carotene, CAS No. 7235-40-7**			

Note: This column does not solve separation of lutein and zeaxanthin.

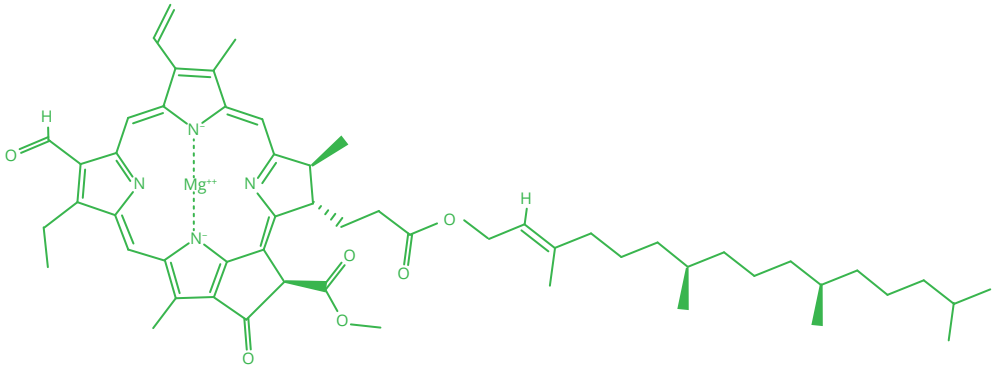
Photosynthetic pigments



Neoxanthin

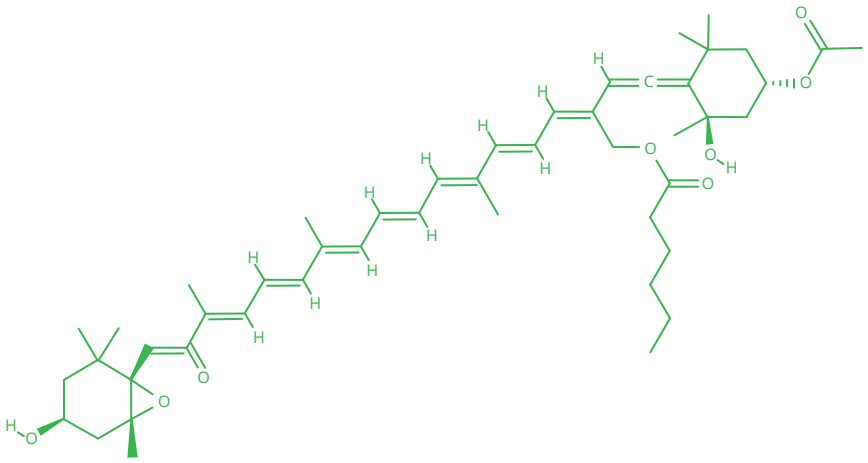


Chlorophyll a

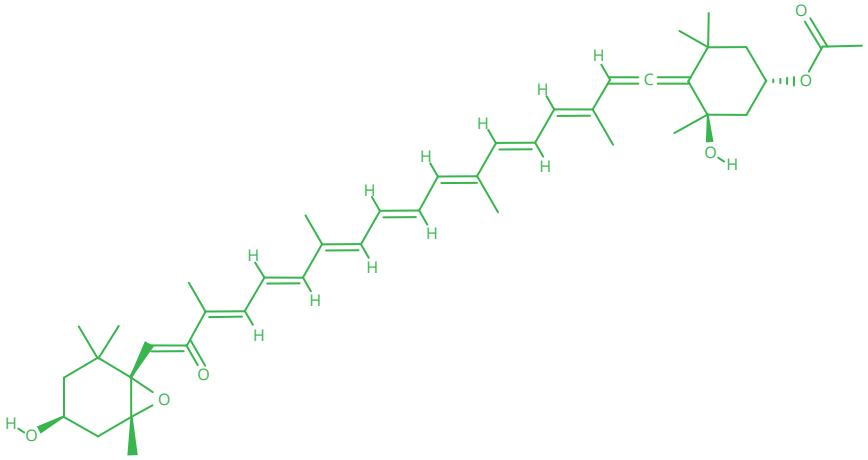


Chlorophyll b

Photosynthetic pigments

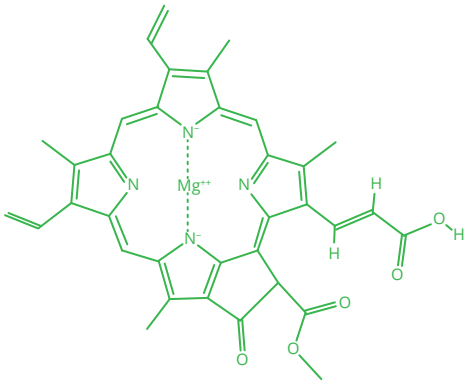


19'-Hexanoyloxyfucoxanthin

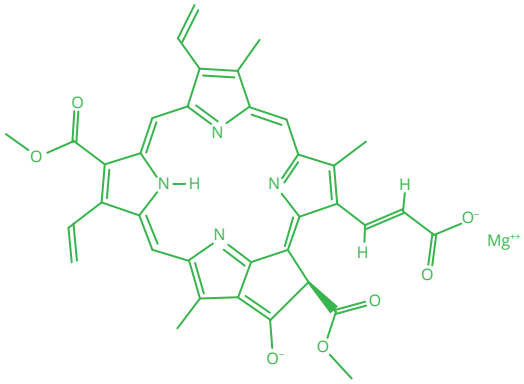


Fucoxanthin

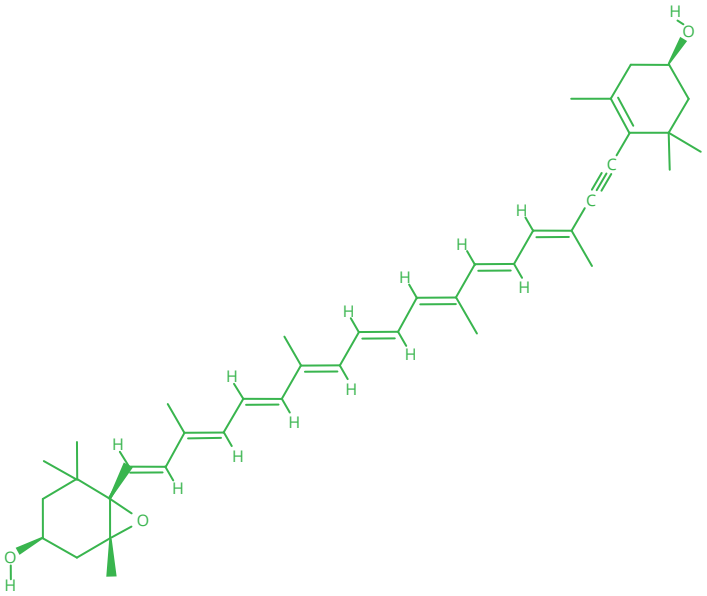
Photosynthetic pigments



Chlorophyll c_2

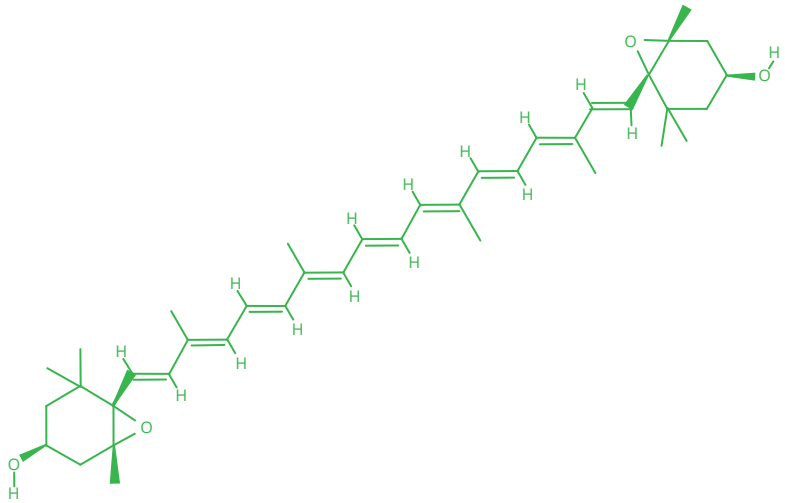


Chlorophyll c_3

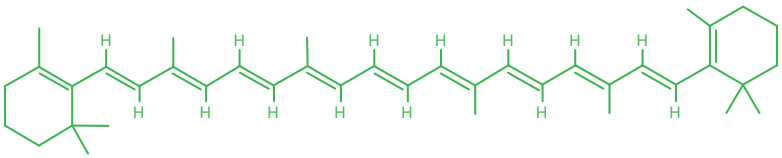


Diadinoxanthin

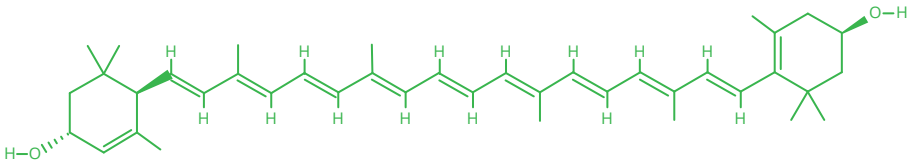
Photosynthetic pigments



Violaxanthin



β-carotene



Lutein