Table 2. Location, functions and basic spectroscopic properties of photosynthetic pigments. The author is indebted to M. Kobayashi for providing a concise list of extinction coefficients of chlorophylls.

Pigment	Type	Location [a)]	Function	Absorption in solution[b)] λ_{max} (ε) [solvent]	Emission in solution [b,c)] λ_{max} [solvent]	Absorption in situ λ_{max}	Ref [d)]
Chl *a*	Phytochlorin	PA, CA, RC	LH, ET	430, 662(78.8) [A] 430,662(90)[D]	668 [A] 666 [D]	~440, 670-720	1,2[f)]
Phe *a*	Phytochlorin	RC	ET	408,505,534,667(55.2)[D]	673[D]	~680	2,3
Chl *b*	Phytochlorin	PA	LH	457,646(46.6)[A] 454,644(56.3)[D]	652 [A] 646 [D]	~460, 630-680	1,2 [f)]
Chl *c*[g]	Phytoporphyrin	PA	LH	446,578,629(23.9)[AP] 446,579,628[D]	~633 [A][a]	~400, 500-620	1
Chl *d*	Phytochlorin	PA, CA, RC	LH, ET	447, 688 (98.3)[D]	695[D]	~440, ~690	4
BChl *a*	Bacteriochlorin	PA, CA, RC	LH, ET	357,391,573,772(91)[D] 365,608,772(60)[M]	800	<400, ~600, 800–960	2 [f)], 4,5
Bphe *a*	Bacteriochlorin	RC	ET	357,525,749(66.2)[D]	762[D]	770	2,6
BChl *b*	Bacteriochlorin	PA, CA, RC	LH, ET	368,408,578,794(106)[D] 368,407,582,795 [A]	810	<400, ~600, 800–1020	4[f)]
Bphe *b*	Bacteriochlorin	RC	ET	398,776(1:0.42)[D]	785[D]	780-795	7,8
BChl *c*	Phytochlorin	PA	LH	432,622,660 (92.7) [D] 435,620,670 (70,9) [M]	667[D]	~460, 730-760	2 [f)],4[e)]
BChl *d*	Phytochlorin	PA	LH	425,612,650 (87.9) [D] 427,612,659 (64) [M]		~440,720-750	4[e,f)]
BChl *e*	Phytochlorin	PA	LH	338,456,594,649(48.9) [A] 476, 660(41)[M]		~460,~715	9[f)]
BChl *g*	Bacteriochlorin	CA, RC	LH, ET	365,405,566,762(76)[A] 364,767(0.8:1) [D]		<400, 780-850	7,10

a) PA = peripheral antenna, CA = core antenna, RC = reaction center; b) λ_{max} in nm, ε in $cm^{-1}mM^{-1}$, solvent abbreviations: A = acetone, AP = acetone/1% pyridine, D = diethylether, DO = dioxan, M = methanol; c) The fluorescence yield of the pigments varies with their environment; d) 1 = Jeffrey et al., 1997; 2 = Goedheer, 1966; 3 = Germano et al., 2001; 4 = Oelze, 1985; 5 = Permentier et al., 2001; 6 = J. H. C. Smith and Benitez, 1955; 7 = M. Kobayashi, personnel communication; 8 = H. Scheer, unpublished; 9 = Borrego et al., 1999; 10 = Kobayashi et al., 1992; e) extinction coefficients calculated from specific extinction coefficients using the 8-ethyl-11-methyl-17^4-farnesyl structures; f) see Chapter 7 (Porra) for extinction coefficients in other solvents; g) family of pigments, absorptions vary with structure, in Chl $c_{1,2}$ and [8-Vinyl]-Pchlide *a* the band at ≈625 is more intense than that at ≈580 nm, in Chl c_3 and Chl c_{CS-170} it is less intense.