

Publication

Absorption and CD spectroscopy and modeling of various LH2 complexes from purple bacteria

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The absorption (OD) and circular dichroism (CD) spectra of LH2 complexes from various purple bacteria have been measured and modeled. Based on the lineshapes of the spectra we can sort the LH2 complexes into two distinguishable groups: "acidophila"-like (type 1) and "molischianum"-like (type 2). Starting from the known geometric structures of Rhodopseudomonas (Rps.) acidophila and Rhodospirillum (Rsp.) molischianum we can model the OD and CID spectra of all species by just slightly varying some key parameters: the interaction strength, the energy difference of alpha- and beta-bound B850 bacteriochlorophylls (BChls), the orientation of the B800 and B850 BChls, and the (in)homogeneous broadening. Although the ring size can vary, the data are consistent with all the LH2 complexes having basically very similar structures.

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