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Figure 10 : Change in electronic absorption spectra up titration of anionic Mn(III) porphyrin **3** with cationic porphyrin **1** at pH 12. Initial concentration of **3** was 1×10^{-4} mol.d m^{-3} . A) The evolution of the electronic absorption spectra are shown from the mixture 0 : 1 to 2 : 1 of **1** and **3**. B) after a) by addition of excess of porphyrin **1**.

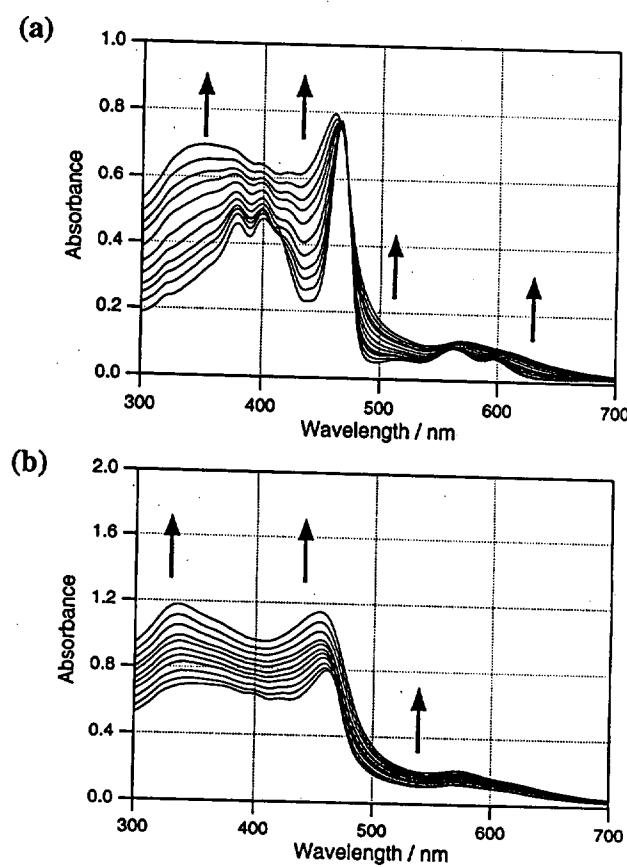
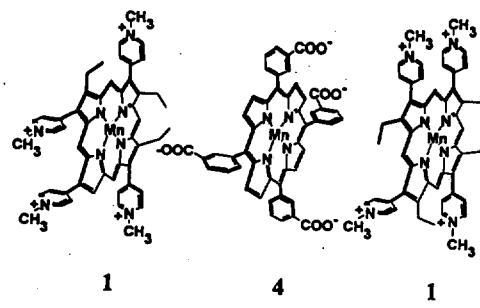
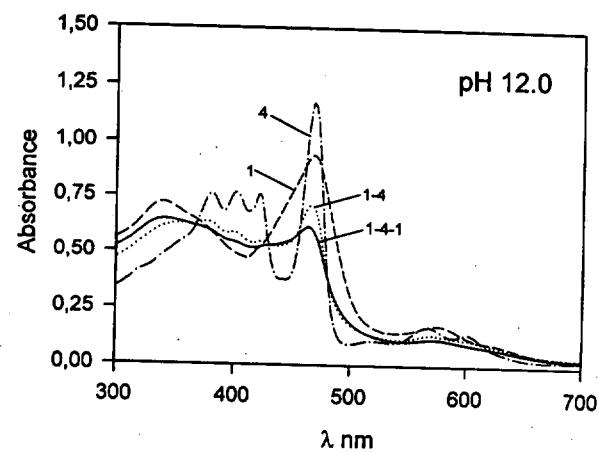


Figure 11 : Change in electronic absorption spectra on mixing cationic Mn(III) porphyrin **1** with anionic Mn(III) porphyrins **4**. The spectra are shown for 1:1 and 2:1 mixture of **1** and **4** at pH 12. The total concentration of the porphyrins were kept at 2×10^{-5} M for the mixtures.



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Figure 12 : Job plot of the spectroscopic changes for **1** + **4** against molar ratio.

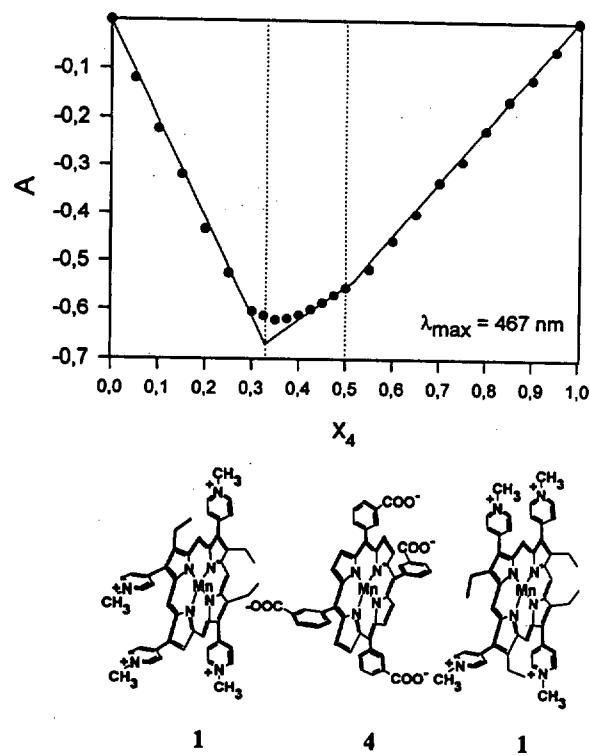


Figure 13 : Uv-visible absorption spectra recorded during a) the reduction of 1

($Mn^{III} \rightarrow Mn^{II}$) at -0.5 V vs. Ag/AgCl at pH 12.b) the oxidation of

manganese porphyrin 1 at +0.5 V vs. Ag/AgCl at pH 12.

c) Uv-visible absorption spectra of 1, Mn^{III} (—), Mn^{II} (-----), O=Mn^{IV}

one-electron-oxidized specie (-----),.

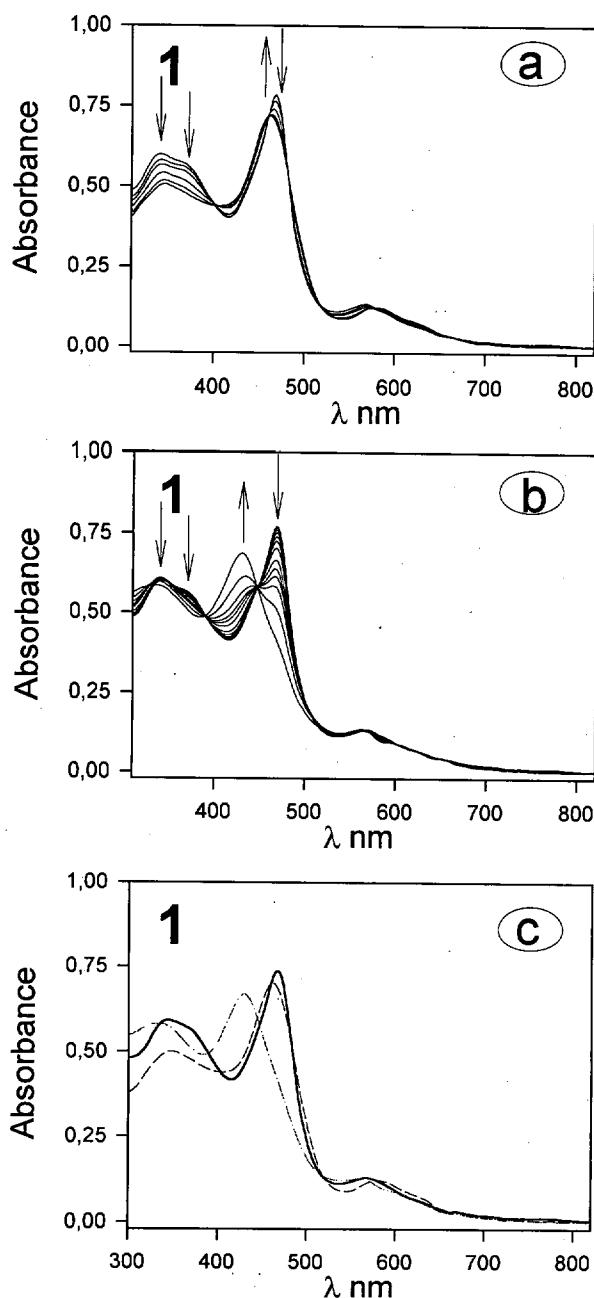


Figure 14 : Uv-visible absorption spectra recorded during a) the reduction of **2**

($\text{Mn}^{\text{III}} \rightarrow \text{Mn}^{\text{II}}$) at +0.5 V vs. Ag/AgCl at pH 12.b) the oxidation of

manganese porphyrin **2** at -0.5 V vs. Ag/AgCl at pH 12. c) Uv-visible

absorption spectra of **2**, Mn^{III} (—), Mn^{II} (-----), $\text{O}=\text{Mn}^{\text{IV}}$ (.....).

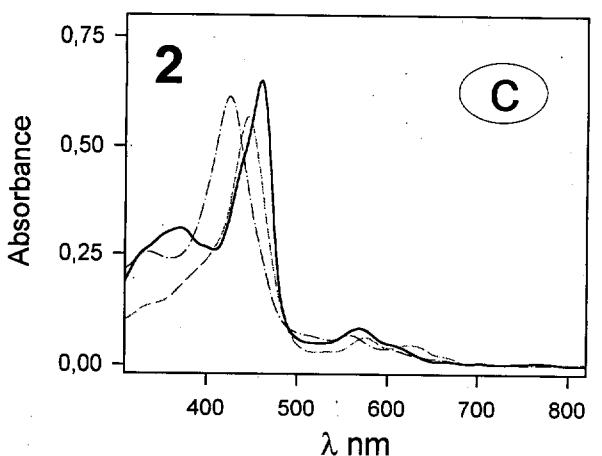
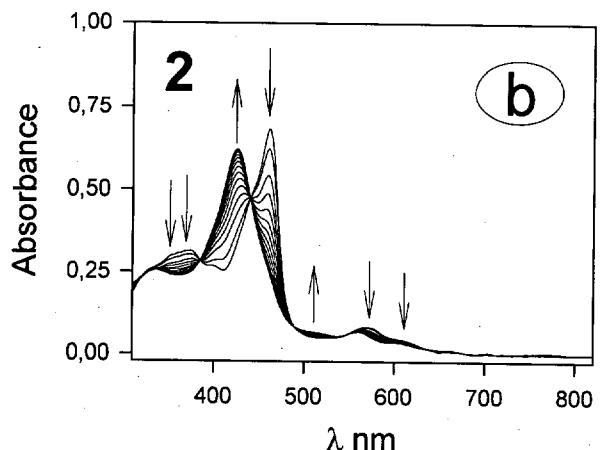
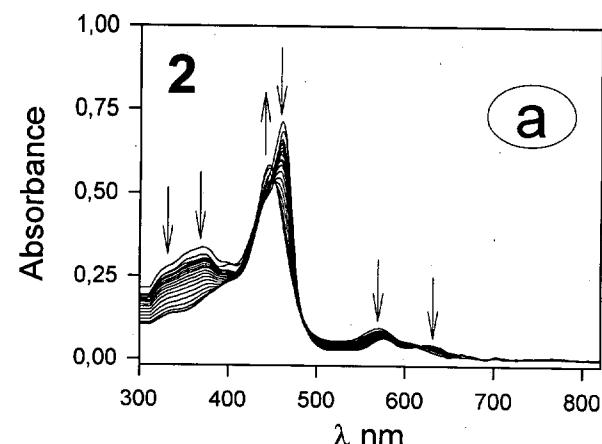
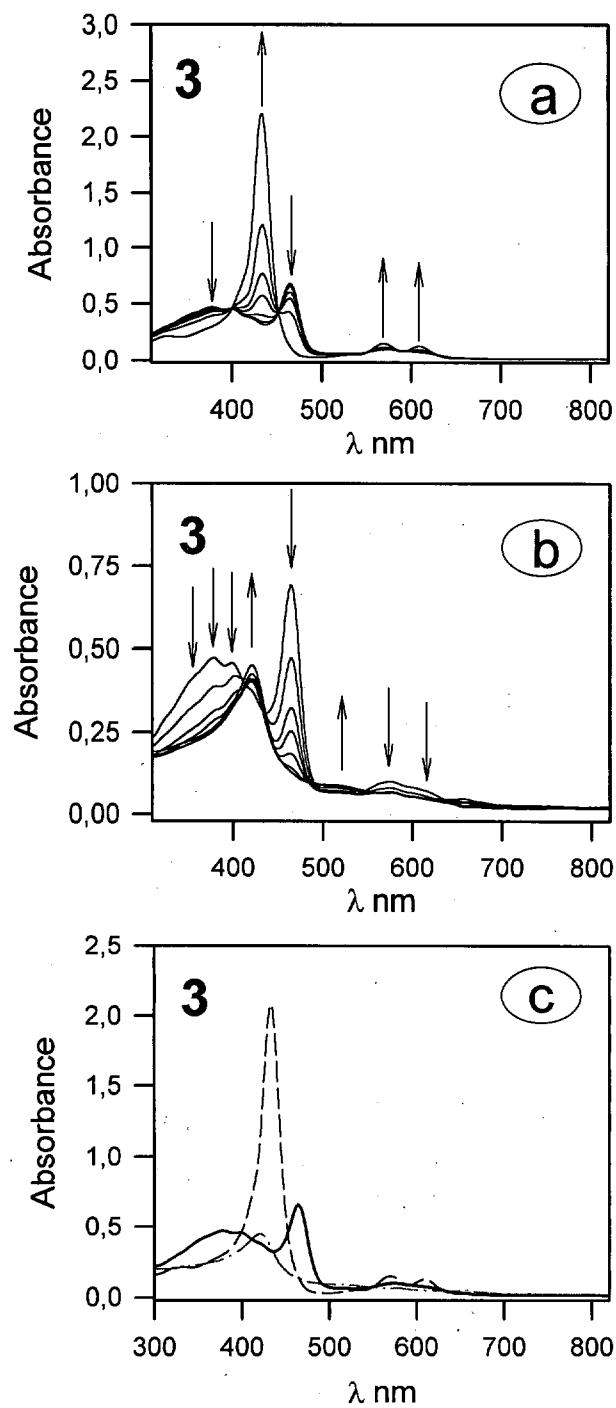


Figure 15 : UV-visible absorption spectra recorded during a) the reduction of manganese porphyrin 3 ($Mn^{III} \rightarrow Mn^{II}$) at -0.5 V vs. Ag/AgCl at pH 12.



- b) the oxidation of 3 at +0.9 V vs. Ag/AgCl at pH 12.
c) UV-visible absorption spectra of 3, Mn(III) (—), Mn(II) (-----), and of one-electron-oxidized species (----).

Figure 16 : Uv-visible absorption spectra recorded during a) the reduction of heterodimer **3-2** ($\text{Mn}^{\text{III}} \rightarrow \text{Mn}^{\text{II}}$) at -0.5 V vs. Ag/AgCl at pH 12. b) the oxidation of **3-2** at +0.5 V vs. Ag/AgCl at pH 12. c) Uv-visible absorption spectra of **3-2**, Mn^{III} (—), $\text{O}=\text{Mn}^{\text{IV}}$ (-----), Mn^{II} (----).

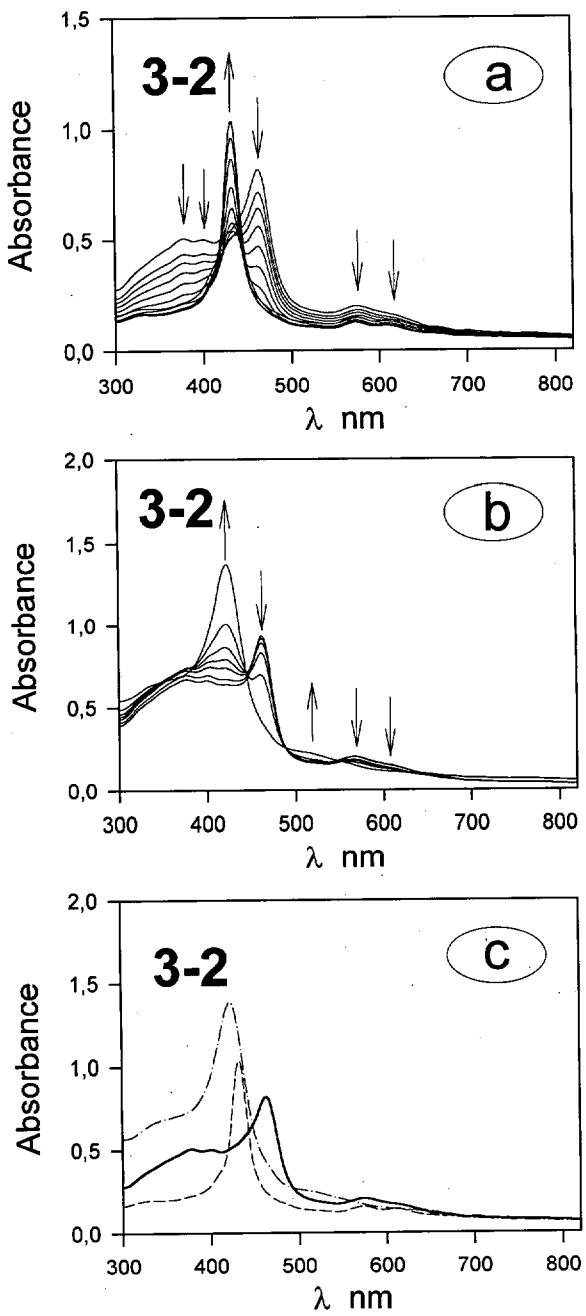


Figure 17 : UV-vis absorption spectra recorded a) during the oxidation of heterotrimer **1-4-1** at +0.5 V vs. Ag/AgCl (pH 12) and b) after chemical reduction of Mn(III) in heterotrimer **1-3-1** (pH 12).

