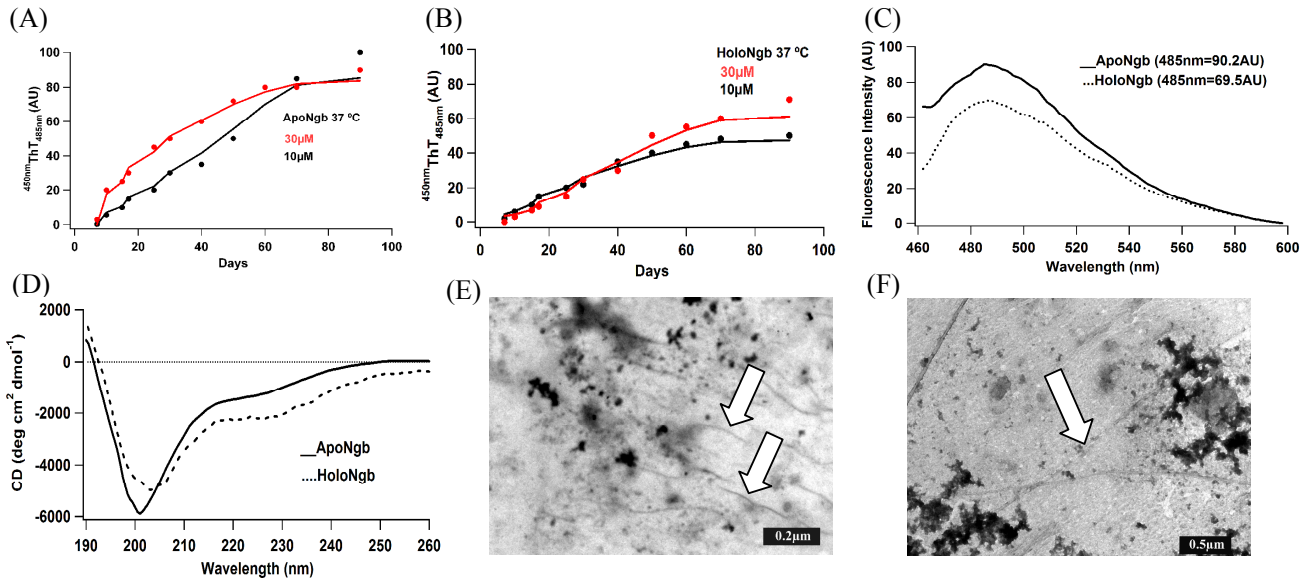
SUPPLEMENTARY INFORMATION

Supplementary Fig.1. Amyloid formation from apo- and holo- Ngb at pH 7 and 37 °C. ThT fluorescence intensity (A) for apo-Ngb and (B) for holo-Ngb incubated at 37°C was measured at 485 nm upon excitation at 450 nm at a ThT/protein molar ratio of 1:2. (C) ThT fluorescence spectra for apo-Ngb and holo-Ngb measured after 90 days of incubation at 37 °C. (D) Far-UV CD spectra of apo-Ngb and holo-Ngb measured after 90 days of incubation at 37 °C. Negatively stained transmission electron microscopic images of (E) apo-Ngb (Scale bar 2μm) and (F) holo-Ngb (Scale bar 0.5 μm) visualized after 90 days. The arrows indicate amyloid fibrils.

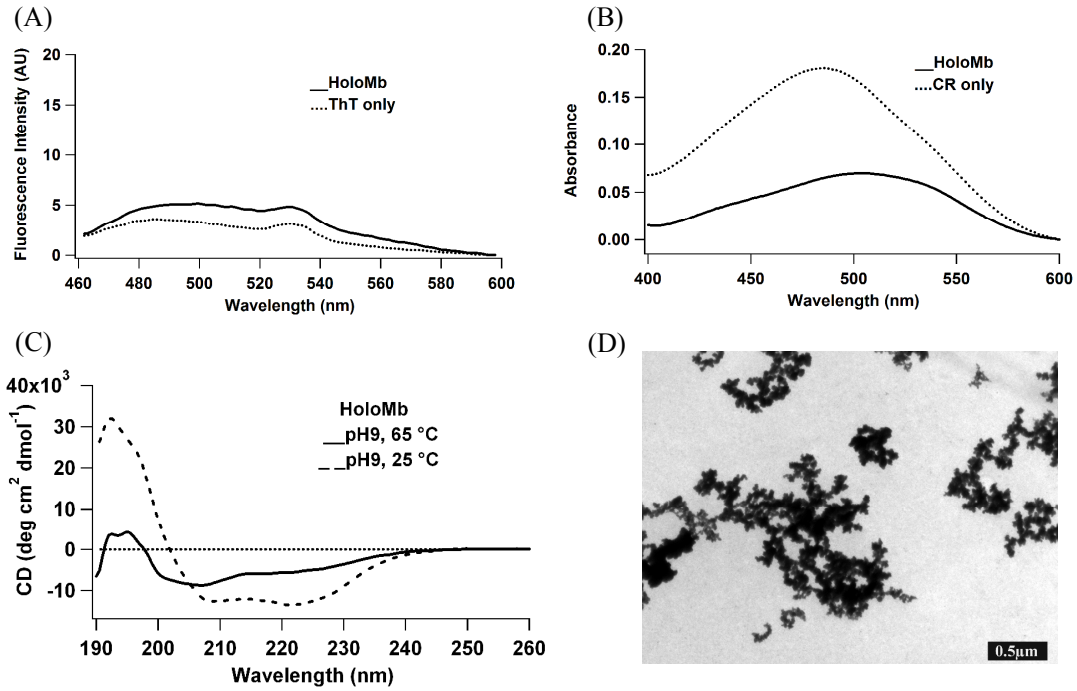
Supplementary Fig.2. Holo-Mb exhibited spectroscopic properties characteristic of amorphous aggregation devoid of amyloid fibrils. (A) Fluorescence spectra of ThT in presence of holo-Mb incubated at pH 9, 65 °C (solid line) and without any protein (dotted line). No significant and characteristic change in fluorescence intensity and wavelength maximum were observed indicating absence of amyloid fibrils. (B) Absorption spectra of Congo red in the presence of holo-Mb incubated at pH 9, 65 °C (solid line), and without any protein (dotted line). No absorbance maximum was observed at 540 nm, indicating lack of amyloid specific aggregation at pH 9, 65 °C. (C) Far UV-CD spectroscopy showed that holo-Mb incubated at pH 9, 65 °C (solid line) retained α-helical content and secondary structural features similar to the protein at pH 9, 25 °C. (D) Negatively stained electron microscopic image of holo-Mb indicated the formation of amorphous aggregate but not amyloid fibrils (Scale bar 0.5 μm).

Supplementary Fig.3. Holo-*Syn*Hb exhibited spectroscopic properties characteristic of amorphous aggregation devoid of amyloid fibrils. (A) Fluorescence spectra of ThT in presence of holo-*Syn*Hb incubated at pH 6, 65 °C (solid line) and without any protein (dotted line). No significant and characteristic change in fluorescence intensity and wavelength maximum were observed indicating absence of amyloid fibrils. (B) Absorption spectra of Congo red in the presence of holo-*Syn*Hb incubated at pH 6, 65 °C (solid line), and without any protein (dotted line). No absorbance maximum was observed at 540 nm, indicating lack of amyloid specific aggregation at pH 6, 65 °C. (C) Far UV-CD spectroscopy showed that holo-*Syn*Hb incubated at pH 6, 65 °C (solid line) retained α-helical content and secondary structural features similar to the protein at pH 6, 25 °C. (D) Negatively stained electron microscopic image of holo-*Syn*Hb indicated the formation of amorphous aggregate but not amyloid fibrils (Scale bar 0.5 μm).

Supplementary Fig. 1



Supplementary Fig. 2



Supplementary Fig. 3