

Abstract

Functional amyloids belong to a class of amyloids that are believed to have biological functions. The amyloid fibrils composed of the fragments of Pmel17 within the melanosome, acts as a template for melanin deposition. We have used the repeat domain (RPT) of this fragment for our studies as it is known to form the amyloid core which promotes melanin biogenesis. Mainly, we have focused on the aggregation studies using steady state and time-resolved fluorescence. The local environment was monitored using intrinsic tryptophan fluorescence and secondary structural changes were monitored via circular dichroism spectroscopy. The intrinsic amyloid fluorescence (blue-fluorescence) was observed during the course of aggregation which was further validated using time-resolved fluorescence spectroscopy. The nanoscale morphology of the aggregates was obtained using atomic force microscopy (AFM) and structural changes were monitored using Raman spectroscopy.