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Measurements of CAC for diblock copolymers EO\textsubscript{272}PO\textsubscript{29} and EO\textsubscript{113}PO\textsubscript{19}:
The surface tension curves exhibit a complex behavior that may be related to premicellar association as well as to a distribution of chain lengths within the polymer (Figure S 1). In the present study, the relevant phenomena is the onset of aggregation. It was determined from surface tension measurements as the first point of intersection of two straight lines, in the regime of decreasing surface tensions. Dynamic light scattering measurements were also achieved for EO\textsubscript{272}PO\textsubscript{29}. No detectable signal was measured below 0.02 mmol\textbullet;L\textsuperscript{-1}. Aggregate size between 0.02 and 0.04 mmol\textbullet;L\textsuperscript{-1} were of ca 30 nm, which is consistent with the formation of micelles. An abrupt increase of the aggregate size was observed for concentrations above 0.04 mmol\textbullet;L\textsuperscript{-1}. In the case of polymer EO\textsubscript{113}PO\textsubscript{19} the presence of aggregates was evidenced by DLS measurements for concentrations larger than 0.20 mmol\textbullet;L\textsuperscript{-1}. However, it was not possible to determine unequivocally the size of these aggregates, most probably because of a mixture of sizes.

\textbf{Figure S 1} : Surface tension measurements using for the two diblock copolymers EO\textsubscript{272}PO\textsubscript{29} and EO\textsubscript{113}PO\textsubscript{19}.

The CAC is defined as the intersection between the straight lines.
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TOC

Nanoparticles stabilized by adsorption of nonionic amphiphilic polymers were investigated in views of their use in biological applications. They exhibited extremely high colloidal stability, low toxicity and were taken up by cells. The effect of di- and tri-block copolymers were compared. This provides a very simple and versatile strategy to stabilize nanoparticles of interest in biotechnologies.