Polyacrylamide in pure water and bio-imaging

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ABSTRACT:

Octavinyl-polyhedral oligomeric silsesquioxane (OV-POSS) with amine-containing polyacrylamide (OV-POSS co-poly (acrylamide)) give a new fluorescent polymeric chemo sensor with fully water solubility. It shows better selectivity for Fe^{3+} in water solution over a wide detection range (pH=4-10). The incorporation of Fe^{3+} to OV-POSS co-poly (acrylamide) results in a significant with fluorescence enhancement in water solution over other metal ions. It was found that the system possesses low-cytotoxic, good permeability, high stability, and compatibility. Hence, it can be applied in bio-image successfully with bright blue fluorescent. Additionally, visible color change to the naked-eye from colorless to bright yellow can be observed directly when Fe^{3+} was added into chemo-sensor OV-POSS co-poly (acrylamide) compared with other metal ions.

Keywords: polyacrylamides, cell imaging, polymeric chemo-sensor, water-solubility

