

## pH-sensitive cationic vesicles and anionic copolymer-modified cationic vesicles

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pH-sensitive cationic vesicles which formed through a salt bridging between N-[3-(dimethylamino)propyl]-octadecanamide and stearic acids were prepared by melting and stirring method which hydrated with rhodamine B-containing HEPES buffer. And then, the suspension was chromatographed after sonication. On the other hand, the vesicles were modified with a copolymer of poly(N-isopropylacrylamide) and methacrylic acid. pH/temperature-dependent release properties were investigated on fluorescence spectrophotometer. According to the results, the release from the vesicles depended on pH and the highest release% was obtained at pH 3 (93.1%). This is due to that the salt bridging was destroyed at acidic conditions leading the release of rhodamine-B. The vesicles were also partly destroyed by adding anionic copolymers due to aggregation. In addition, the turbidities of the copolymer were investigated and the copolymer-modified vesicles were characterized by particle size analyzer and differential scanning calorimetry. In conclusion, the vesicles were pH-sensitive and could be modified with negative copolymers. The cationic vesicles have a potential as pH-sensitive carriers for drug or gene delivery.