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## HER-2 Targeted PEG-PE Immuno-Micelle for Bioluminescent Imaging

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PEG-PE sterically stabilized lipid-core micelles, self-assembling lyophilic colloidal nanoparticles formed at a very low CMC, are currently used as drug carriers. Hydrophilic PEG corona stabilizes and protects the structure from opsonization and MPS uptake; moreover, it reduces the size to target passively the leaky tissue compartments by selective extravasation [1]. To actively target the internalizing and antiapoptotic HER-2 membrane receptor in tumor cells, we aimed to prepare antibody-tagged polymeric micelle (immunomicelle) containing 0.5 mole% rhodamine-PE for bio-imaging. Micelles were prepared by sonication of methanolic PEG-PE dispersion (1 mM) followed by dialysis. Immunomicelles were prepared by coupling 2-iminothiolane activated trastuzumab to PEG-PE-Mal. 2000Da. Particle size and conjugation yield were determined by laser light scattering and HPLC-based gel permeation chromatography, respectively. PEG-PE micelles represented a colloidal dispersion with sizes ranging from 5-50 nm. The selective binding capacity of the immunomicelle is going to be checked in HER2+ (SK-BR-3) and HER2- (MCF-7) breast cancer cells by epifluorescent microscopy.

### References

[1] O.M. Koo, I. Rubinstein and H. Onyuksel. *Nanomedicine* 1, 3(2005) 193-212.