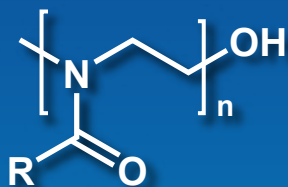
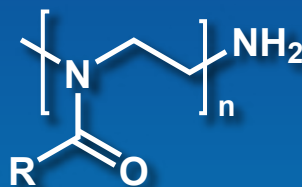


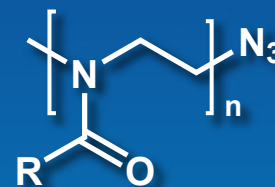
# Water-solubility Enhancing Agents Superior to PEGs



R = CH<sub>3</sub> [P2506]  
R = CH<sub>2</sub>CH<sub>3</sub> [P2507]  
R = (CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub> [P2508]



R = CH<sub>3</sub> [U0135]  
R = CH<sub>2</sub>CH<sub>3</sub> [U0133]



R = CH<sub>3</sub> [U0134]  
R = CH<sub>2</sub>CH<sub>3</sub> [U0132]

## Advantages

- Biocompatible and non-immunogenic pseudo-polypeptide structure
- P2506, U0135, U0134 are more hydrophilic than poly(ethylene glycol) (PEG).
- Can be conjugated to a target molecule using a method suitable for each terminal functional group (OH, NH<sub>2</sub>, N<sub>3</sub>)
- P2507 or P2508 transition to a hydrophobic state in water when heated (Low Critical Solution Temperature (LCST): P2507 ca. 65°C, P2508 ca. 25°C)

## Applications

### Surface Coating with Protein-repellent or Nonfouling Properties

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### Drug Delivery Systems

T. X. Viegas, M. D. Bentley, J. M. Harris, Z. Fang, K. Yoon, B. Dizman, R. Weimer, A. Mero, G. Pasut, F. M. Veronese, *Bioconjugate Chem.* **2011**, 22, 976.  
R. Luxenhofer, Y. Han, A. Schulz, J. Tong, Z. He, A. V. Kabanov, R. Jordan, *Macromol. Rapid Commun.* **2012**, 33, 1613.  
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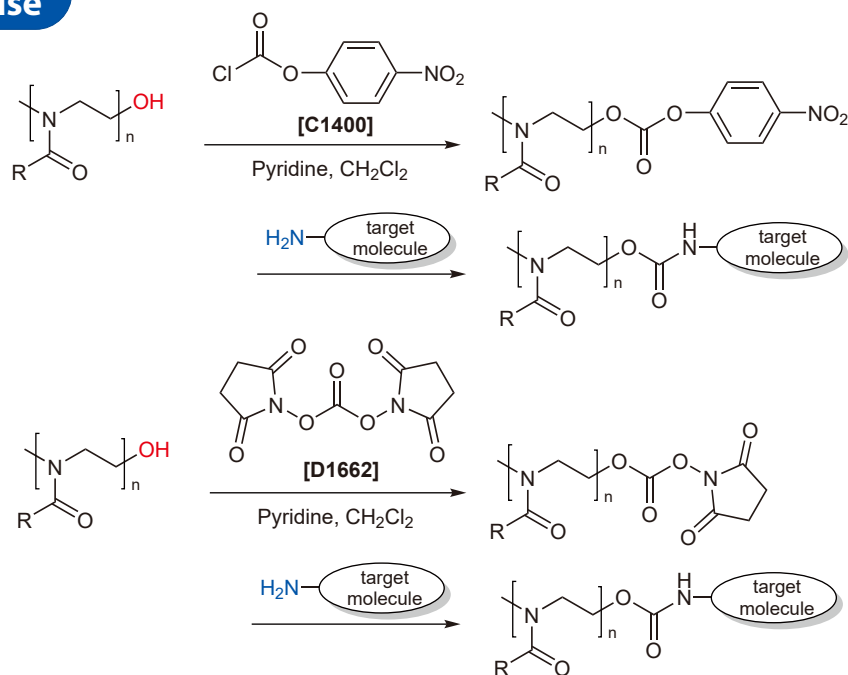
### Thermoresponsive Material

R. Hoogenboom, H. M. L. Thijs, M. J. H. C. Jochems, B. M. van Lankvelt, M. W. M. Fijten, U. S. Schubert, *Chem. Commun.* **2008**, 5758.  
M. A. Boerman, H. L. V. der Laan, J. C. M. E. Bender, R. Hoogenboom, J. A. Jansen, S. C. Leeuwenburgh, J. C. M. V. Hest, *J. Polym. Sci. A* **2016**, 54, 1573.  
M. Mees, E. Haladjova, D. Momekova, G. Momekov, P. S. Shestakova, C. B. Tsvetanov, R. Hoogenboom, S. Rangelov, *Biomacromolecules* **2016**, 17, 3580.

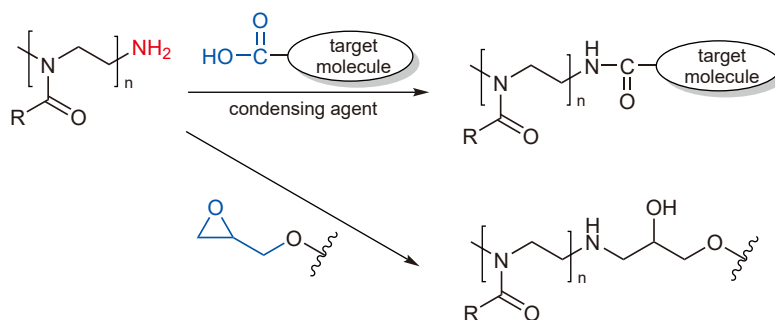
ULTROXA <sup>®</sup> Poly(2-methyl-2-oxazoline) (n≈approx. 100)	200mg [P2506]
ULTROXA <sup>®</sup> Poly(2-methyl-2-oxazoline) Amine Terminated (n≈approx. 50)	100mg / 500mg [U0135]
ULTROXA <sup>®</sup> Poly(2-methyl-2-oxazoline) Azide Terminated (n≈approx. 50)	100mg / 500mg [U0134]
ULTROXA <sup>®</sup> Poly(2-ethyl-2-oxazoline) (n≈approx. 100)	500mg [P2507]
ULTROXA <sup>®</sup> Poly(2-ethyl-2-oxazoline) Amine Terminated (n≈approx. 50)	100mg / 500mg [U0133]
ULTROXA <sup>®</sup> Poly(2-ethyl-2-oxazoline) Azide Terminated (n≈approx. 50)	100mg / 500mg [U0132]
ULTROXA <sup>®</sup> Poly(2-propyl-2-oxazoline) (n≈approx. 100)	200mg [P2508]

# Water-solubility Enhancing Agents Superior to PEGs

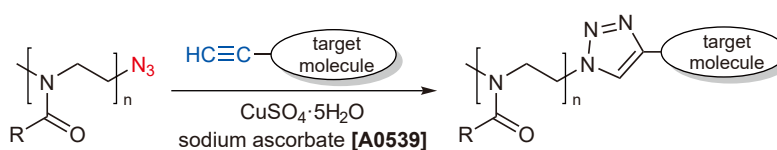
## Examples of use



Reference T. X. Viegas, M. D. Bentley, J. M. Harris, Z. Fang, K. Yoon, B. Dizman, R. Weimer, A. Mero, G. Pasut, F. M. Veronese, *Bioconjugate Chem.* **2011**, 22, 976.



Reference L. Tauhardt, M. Frant, D. Pretzel, M. Hartlieb, C. Bücher, G. Hildebrand, B. Schröter, C. Weber, K. Kempe, M. Gottschaldt, K. Liefelth, U. S. Schubert, *J. Mater. Chem. B.* **2014**, 2, 4883.



Reference G. Volet, T.-X. Lav, J. Babinot, C. Amiel, *Macromol. Chem. Phys.* **2011**, 212, 118.

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