An old pony is teaching us new tricks - Poly(2-oxazoline)s and poly(2-oxazine)s: From self-assembly to drug-delivery and 3D printing**

Lukas Hahn[1], Haider S. Malik[1], Michael M. Lübtow[1], Theresa Zorn[2], Josef Kehrein[3], Anna-Lena Ziegler[1], Vladimir Aseyev[5], Christoph Sotriffer[3], Ann-Christin Pöppler[2,], and Robert Luxenhofer[1, 5,*]*

[1] Functional Polymer Materials, Chair for Advanced Materials Synthesis, Institute for Functional Materials and Biofabrication, Department of Chemistry and Pharmacy, Julius-Maximilians-University Würzburg, Röntgenring 11, 97070 Würzburg, Germany

[2] Institute of Organic Chemistry, Department of Chemistry and Pharmacy, Julius-Maximilians-University Würzburg, Am Hubland, 97074 Würzburg, Germany

[3] Institute of Pharmacy and Food Chemistry, Department of Chemistry and Pharmacy, Julius-Maximilians-University Würzburg, Am Hubland, 97074 Würzburg, Germany

[4] Chair for X-Ray Microscopy, Julius-Maximilians-University Würzburg, Josef-Martin-Weg 63, 97074 Würzburg, Germany

[5] Soft Matter Chemistry, Department of Chemistry, and Helsinki Institute of Sustainability Science, Faculty of Science, Helsinki University, 00014 Helsinki, Finland

* robert.luxenhofer@helsinki.fi

**This contribution is dedicated to the memory of Prof. Françoise Winnik.

The polymer families of poly(2-oxazoline)s and poly(2-oxazine)s have been known for decades, but even though in early work by Zalipsky et al. their potential as alternative to PEG for the fabrication of stealth liposomes was noted [1], they did not see wide spread attention. With promising first-in-human results for a poly(2-oxazoline)-drug conjugate (SER-214)[2] and other exciting academic development in the last decade [3], interest in poly(2-oxazoline)s and – more recently – poly(2-oxazine)s seems to be increasing significantly. We have studied in particular new amphiphilic block copolymers and their self-assembly in recent times, with a focus on novel monomers and monomer combinations, and have found very interesting structure property relationships with respect to the solubilization of hydrophobic drugs [4] and temperature induced self-assembly and gelation. Of particular interest are observations highlighting the importance of the hydrophilic block of amphiphilic block copolymers in some of these self-assemblies, either in drug solubilization [5] or in the self-assembly via interaction with the hydrophobic block [6].

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