

Tailoring shape and charge: Optimized PVAm-based gene delivery vectors by altering architecture and cationic content



Let's connect!

Session 7
Room 1

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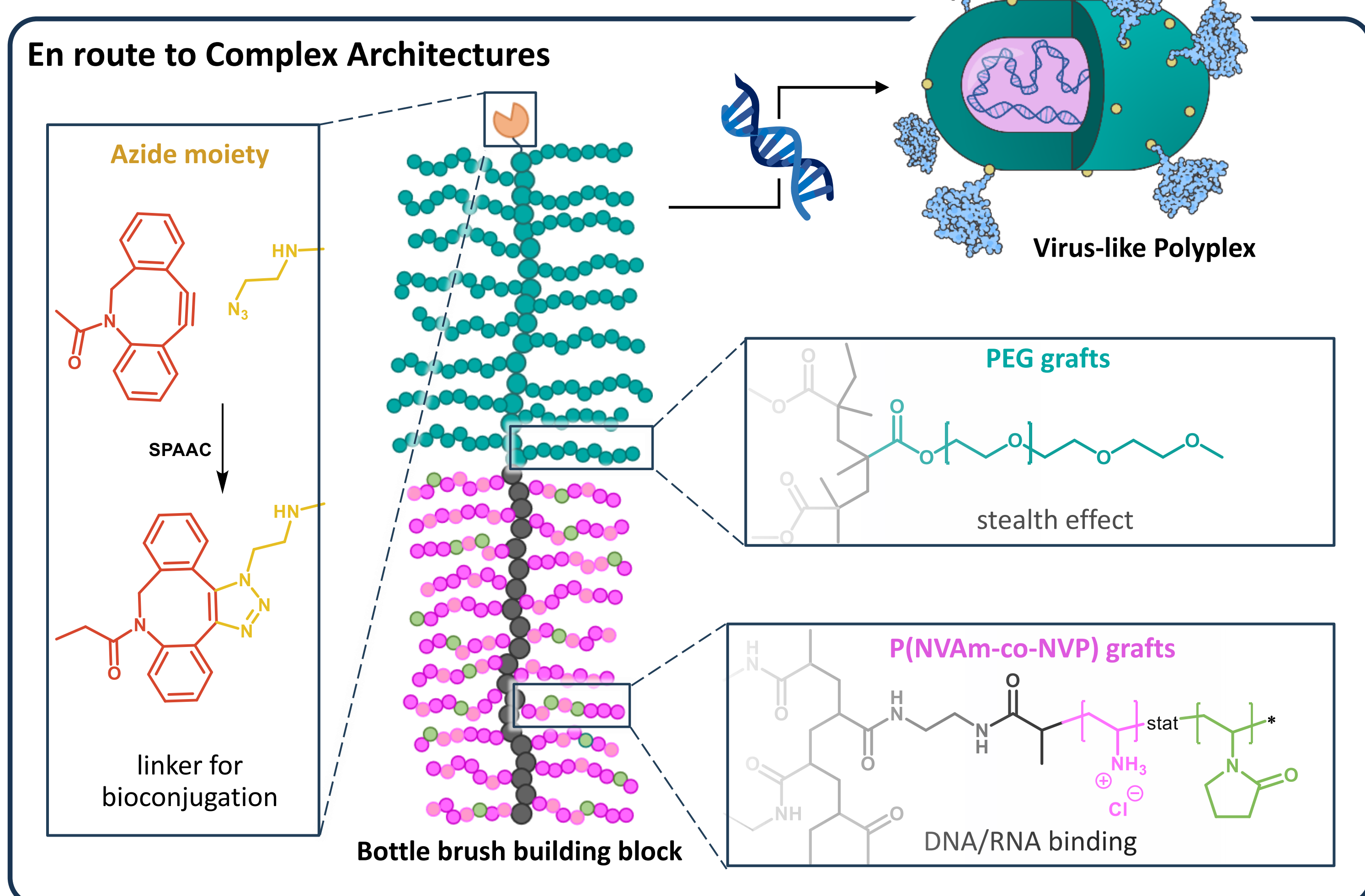
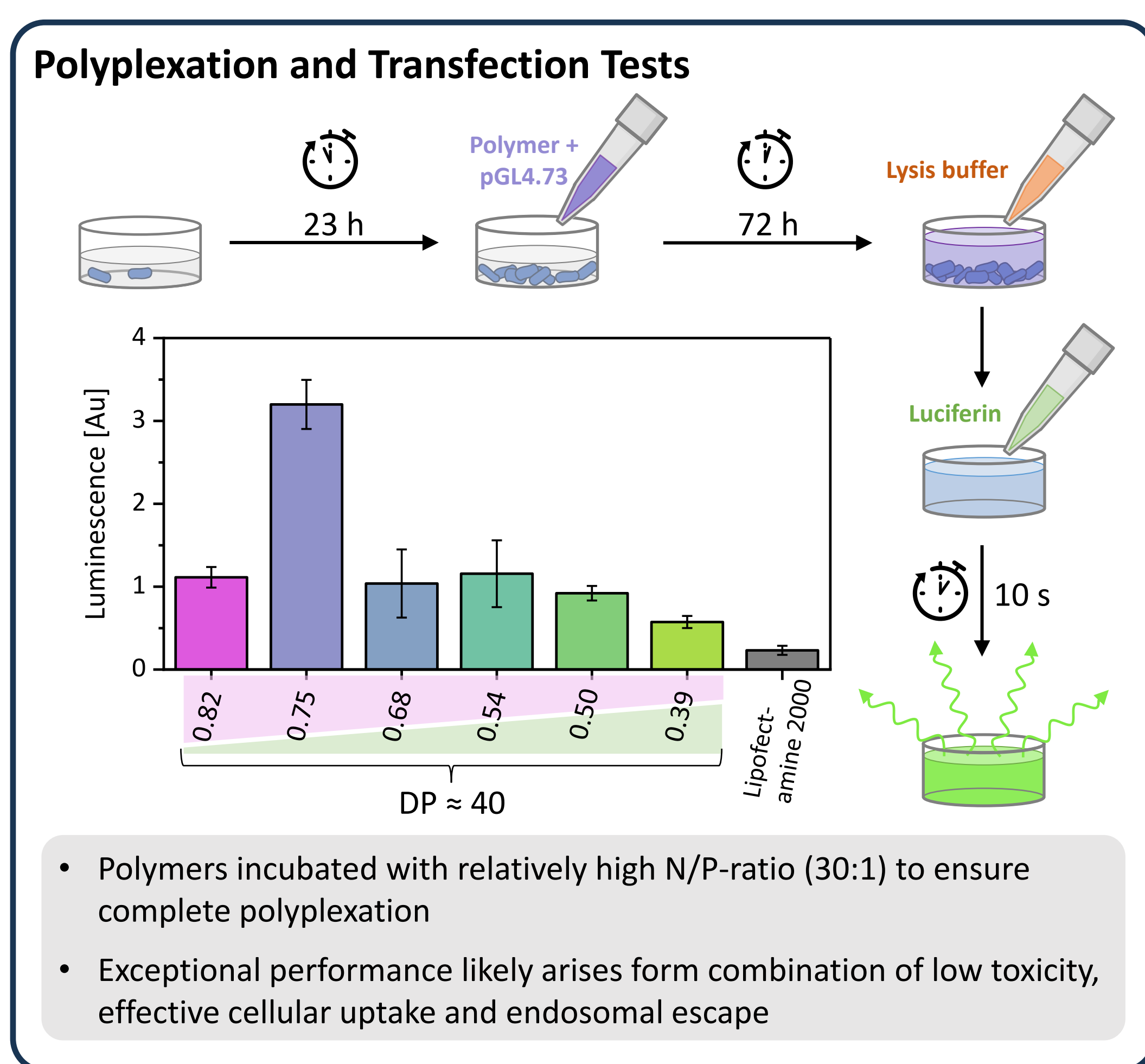
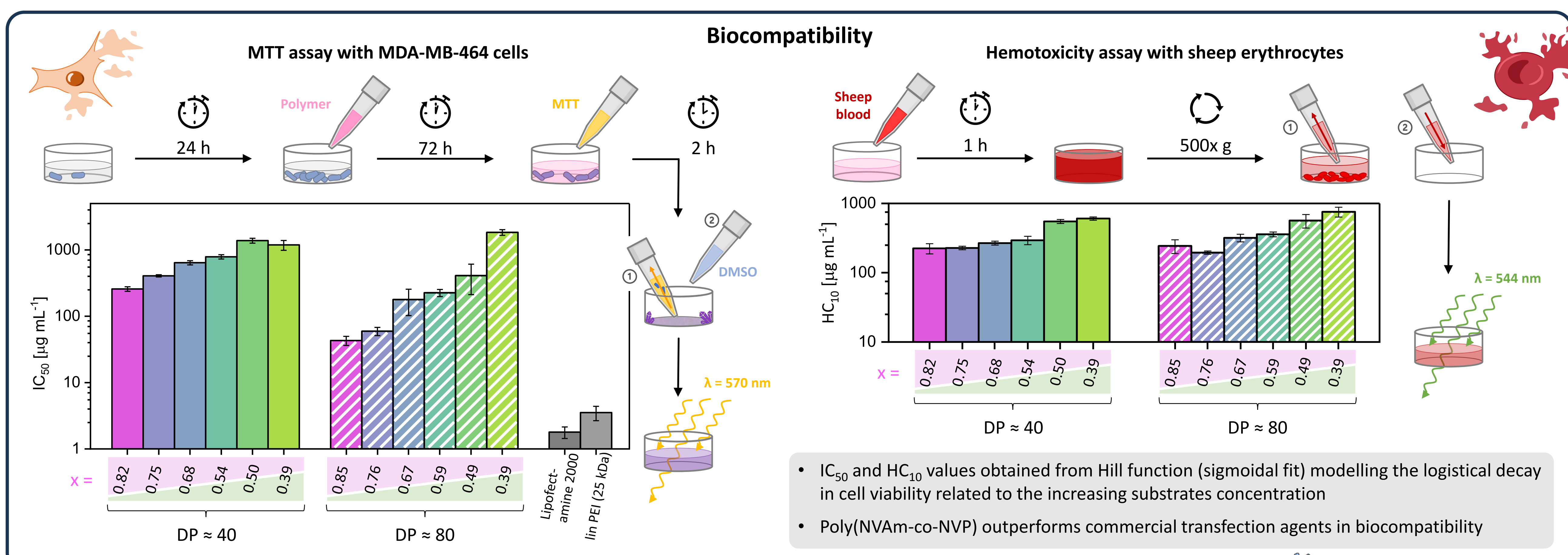
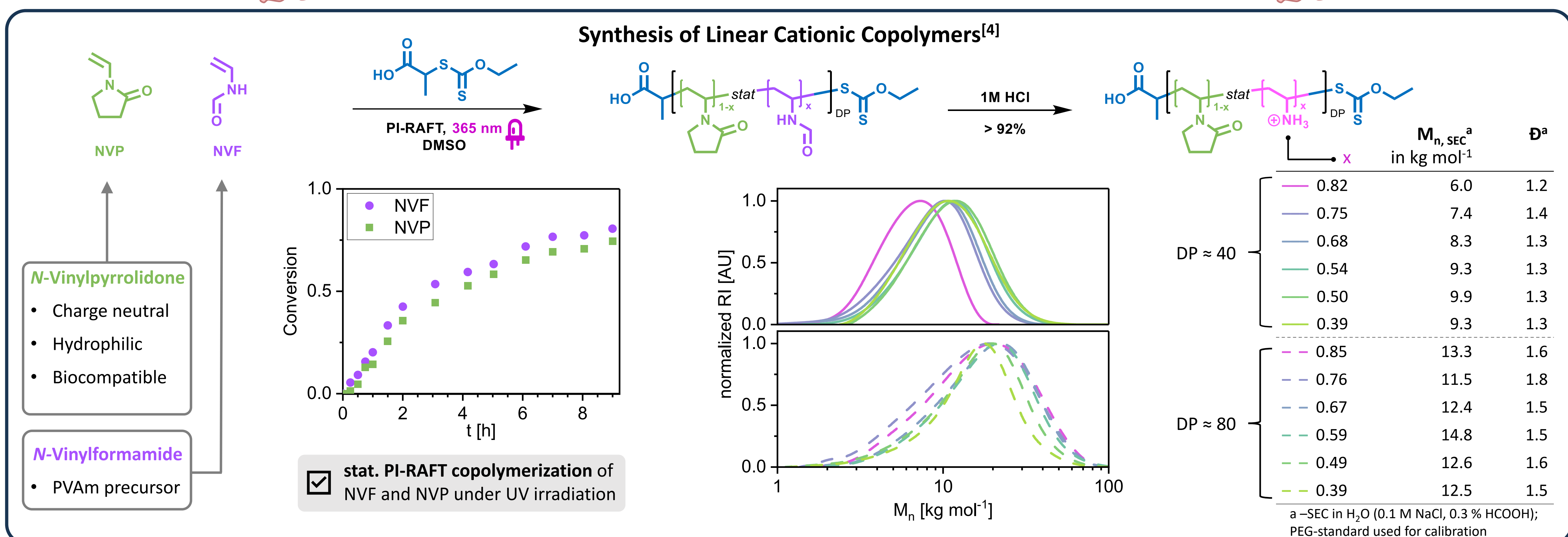
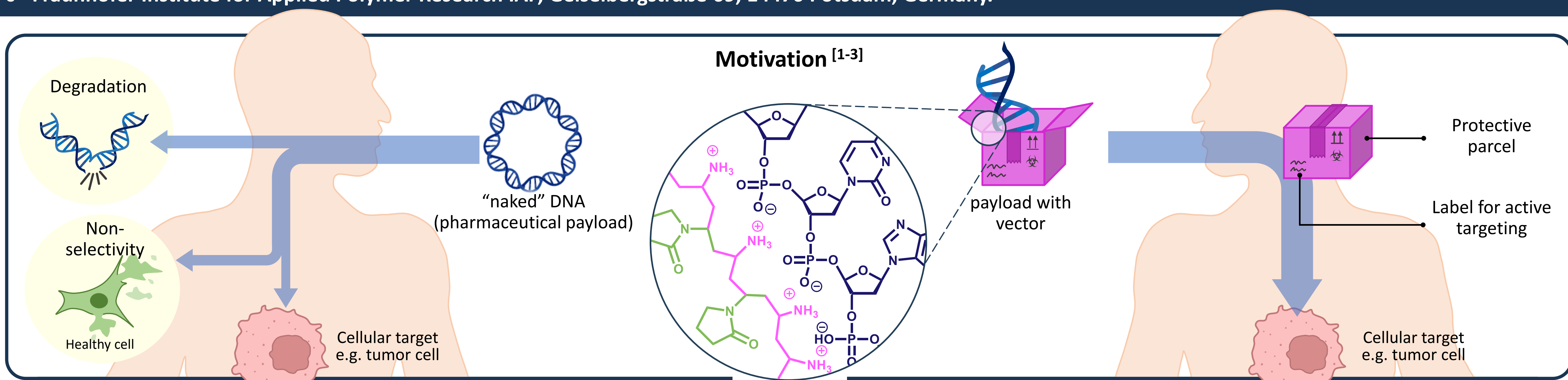
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Summary

✓ **Synthesis of poly(NVAm-stat-NVP) library** via PI-RAFT polymerization and acidic hydrolysis

Poly(NVAm-co-NVP) **outperforms** commercial transfection agents (Lipofectamine 2000, linear PEI) in **biocompatibility and transfection assays**

✓ **Mechanism of transfection** will be investigated while more **complex molecular architectures** are prepared

References

- [1] A. Shahyari, M. Saghaeian Jazi, S. Mohammadi, H. Razavi Nikoo, Z. Nazari, E. S. Hosseini, I. Bartscher, S. J. Mowla, H. Lickert, *Front. Genet.* **2019**, *10*, 868.
- [2] E. B. Yahya, A. M. Alqadhi, *Life Sci.* **2021**, 269.
- [3] A. Pathak, S. Patnaik, K. C. Gupta, *Biotechnology J.* **2009**, *4*, 1559 – 1572.
- [4] Dupre-Demorsy, Alexis; Kurowska, Izabela; Balayssac, Stéphane; Henneier, Marie; Ric, Audrey; Bourdon, Valérie; Ando, Tsuyoshi; Ajiro, Hiroharu; Coutelier, Olivier; Destarac, Mathias, *Polym. Chem.* **2022**, *13*, 6229 – 6237.

Acknowledgements

DFG Deutsche Forschungsgemeinschaft
Project no.: 527477869

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