

A novel approach for precise & gene-sized integration of DNA – “One-pot” PASTA



PRINCIPLE INVESTIGATORS:

Jonas Kath, Isabell Kassing, Dimitrios L. Wagner
Charité



SUMMARY

Current gene transfer methods for ATMPs rely on retro/lenti- or adeno-associated virus (AAV) systems, where transgene integration occurs randomly and is limited by viral packaging capacities. In addition, GMP-grade viruses are associated with high costs and time delays.

“One-pot” PASTA (Programmable and Site-specific Transgene Addition) allows one-step transfection of all gene editing reagents and overcomes size-limitations.

The approach shifts from viral to non-viral editing and from random to precise integration.

PROJECT GOALS

- To establish a platform for precise and site-specific integration of large cargo by using the recently established one-pot “PASTA” technology.

LONG-TERM GOALS

- To establish a novel gene transfer system for cell & gene therapy allowing highly efficient and site-specific integration of large genetic cargo with minimal toxicity.
- Commercial distribution either via a license or Spin-Out.