XL-protein
Superior Biopharmaceuticals

Antibody fragments & alternative binding proteins

Despite the huge success of monoclonal antibodies, there are some indications and disease targets which require an alternative antibody format. Full-length antibodies often show a poor tumor penetration, the bivalency sometimes causes receptor clustering and partial activation, while FcγR binding and complement activation can cause unwanted side effects such as thrombosis or inflammation. Furthermore, toxin conjugation to generate ADCs is inefficient and the production of complex antibody fusion proteins is challenging. PASylation® combined with antibody fragments like Fabs, single domain Ig fragments or alternative binding proteins such as Anticalins®, Darpins®, Adnectins® and i-bodies® can solve these issues, leading to long-acting, safer and more potent biologics.

Extended plasma half-life

- Expanded hydrodynamic volume leading to extended circulation time
- Reduced injection frequencies

Biodegradable PEG alternative

- PAS overcomes PEG hypersensitivity
- No organ accummulation during chronic treatment

Efficient & cheap production

- Genetic fusion: high yield, homogenous product & reduced cost
- Compatible with various industry standard expression systems

PAS + binding protein enable:

- Long-acting antagonists without Fc effector functions
- Smart antibody drug conjugates (ADCs)
- T-cell engagers
- Bi-/Multispecifics

Related Publications:

Deuschle F.C. et al. (2020) Development of a high affinity Anticalin® directed against human CD98hc for theranostic applications. Theranostics 10, 2172-2187.

Brandl F. et al. (2020) Optimizing the anti-tumor efficacy of protein-drug conjugates by engineering the molecular size and half-life. J. Control Release 327, 86-197.

Aghaabdollahian S. et al. (2019) Enhancing bioactivity, physico-chemical, and pharmacokinetic properties of a nano-sized, anti-VEGFR2 Adnectin, through PASylation technology. Sci. Rep. 9, 2978.

Griffiths K. et al. (2019) Half-life extension and non-human primate pharmacokinetic safety studies of i-body AD-114 targeting human CXCR4. MAbs 11, 1331-1340.

Längin M. et al. (2018) Consistent success in life-supporting porcine cardiac xenotransplantation. Nature 564, 430-433.

Partnering contact:

XL-protein GmbH
Claus Schalper
Lise-Meitner-Str. 30
85354 Freising
Germany

Phone: +49 (0) 8161 53730-90
Fax: +49 (0) 8161 53730-99
E-mail: bd@xl-protein.com

Web: www.xl-protein.com