Protheragen

From 300-Billion Real Antibody Library to AI-Accelerated PCC Asset Creation

Seeking Out-licensing, Co-development, Custom Discovery, and Strategic Partnerships

Platform Overview: *K® BioAI Platform

*K has built an integrated antibody discovery platform that combines a large-scale real antibody library with AI-enabled design, screening, and optimization workflows. *K® BioAI platform is designed to support the end-to-end generation of PCC and multi-specific antibody molecules, from target interrogation and library screening to sequence optimization and developability assessment

At its core, *K® BioAI platform integrates:

- **A 300-billion-scale real antibody diversity library**, covering multiple antibody formats including conventional antibodies, nanobodies, and engineered multi-specific constructs;
- **AI-enabled modeling and analysis modules**, trained on internally generated experimental data to support candidate selection, optimization, and prioritization;
- **A closed-loop discovery workflow**, linking wet-lab screening with computational refinement to enable iterative improvement of antibody sequences;
- **Modular design capabilities**, allowing flexible assembly of mono-, bi-, and multi-specific antibody formats based on project needs.

Key Differentiators

- **PCC Assets Designed for Licensing and Partnership**

*K's discovery programs are structured to generate PCC molecules with clear transferability, enabling flexible collaboration models including licensing, technology transfer, co-development, and commissioned discovery.

- **Real Antibody Diversity as a Competitive Foundation**

Unlike platforms relying primarily on virtual libraries, *K leverages a 300-billion-scale real antibody library, providing experimentally validated diversity that reduces early discovery uncertainty and false-positive risk.

- **Accelerated PCC Generation without Compromising Developability**

By integrating AI-guided design with wet-lab validation, the platform enables rapid generation of PCC candidates while maintaining a strong focus on developability parameters such as stability, expression, and format feasibility.

- **Proven Capability Across Multispecific and Nanobody Modalities**

*K® BioAI platform has demonstrated the ability to generate tri-specific antibodies and nanobody candidates with differentiated functional profiles, supporting complex immune engagement strategies and next-generation immunotherapy concepts.

- **High Flexibility for Target-Driven and Custom Programs**

*K's platform supports both internally defined pipelines and partner-driven projects, allowing rapid customization of PCC molecules based on target selection, modality preference, and strategic objectives.

Pioneering Nanobody Immunotherapies: PTH-0525 and PTH-0502

Name: PTH-0525

Target: CD3, BCMA, GPRC5D

Modality: Trispecific Antibody

Development Stage: Completed in vitro efficacy testing, currently advancing to in vivo studies.

Key Differentiator: Demonstrates superior in vitro efficacy compared to leading competitors, including Teclistamab and Talquetamab, with enhanced immune activation and multi-targeting capabilities.

Name: PTH-0502
Target: CTLA-4
Modality: Nanobody
Development Stage: Camel immunization, library construction, and screening completed. Cross-reactivity observed in humans and monkeys (slight nonspecific binding with BSA). Currently undergoing re-screening with Human IgG1 Fc pre-clearing, and ongoing.
Key Differentiator: A total of 7 sequences were identified, with 3 sequences showing strong T-cell activation (EC50 values comparable to Ipilimumab), 2 sequences with moderate activation, and 2 sequences exhibiting weak activation. Demonstrates potent T-cell activation with high specificity, offering an alternative to traditional immune checkpoint inhibitors.

R&D COMPANY OVERVIEW

***K Biotech** is a leading biotechnology company that specializes in **early-stage antibody discovery and optimization**. Leveraging its proprietary **300-billion diverse real drug-like molecule library** and AI-powered discovery platform, ***K® BioAI for Scientists**, the company accelerates biologics R&D and delivers next-generation **multi-specific antibodies**, monoclonal **antibodies**, and nanobodies. *K has established itself as a trusted partner in the pharmaceutical and biotech industries with **300+ commercial collaborations, 20+ clinical-stage programs,** and **10+ licensing agreements.**

R&D COMPANY OVERVIEW

- Out-licensing
- Co-development
- Contract Development

More Innovative Assets Seeking Out-licensing, Co-development, and Contract Development

Leveraging *K's proprietary platform, a cutting-edge AI-driven discovery platform, PCC molecules targeting a broad range of therapeutic areas are being developed at an accelerated pace in early-stage discovery. These assets are in preclinical development and are being designed for a variety of indications, including oncology, autoimmune diseases and other therapeutic areas. The platform's flexibility allows for rapid customization of PCC molecules based on specific client needs, enabling fast development and response to emerging market demands .

Targets in Development									
ASGPR1 ECD (50-100)	B7H3 (4Ig)	B7H4	B7H6	BCMA	CCR8	CD137 (4-1BB)	CD16a	CD19	CD20
CD22	CD25 (IL-2Ra) EDB	CD28	CD39	CD47	CD52	CD73	CD8A	CD98hc	CDH17
CEACAM-6	Claudin 18.2	DLL3	EGFR	EpCAM	FAP	FcRH5	FcRn	FGFR2b	FGL1
GPC3	GPRC5D	Her3	HSA	Human Fc fragment	IGF1R	IL-11	IL-17A	IL23p19	IL-31
IL4Ra	IL-4Ra	KLK2	LAG3	LGR5	MSLN	NAV1.8	Nectin-4	Nhis-CD79b	PD-1
PD-L1	PIGR	PSMA	RnF43	ROR1	SCF	SEZ6	SEZ6	ST2	STEAP1
STEAP2	TFR1	TGFBR2	TIGIT	TIM3	TL1A	TNFalpha	TROP-2	TSLP	VEGFR1
CDH17 x Her2 (ADC)		NKG2A x CD94		TSLP x IL4R		PIGR x TSLP x IL4r			

About Protheragen

Headquartered in New York, Protheragen is a US-based company specializing in the global pharmaceutical and biomedical sectors. Our core services aim to precisely connect innovative pharmaceutical assets with potential partners worldwide, efficiently facilitating diverse strategic collaborations including, but not limited to: Licensing-out, Financing, Co-development, and Mergers & Acquisitions.

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