Accel TdT Program

CUSTOMIZED *TDT ENZYMES* FOR ENZYMATIC DNA AND RNA SYNTHESIS

ACCEL TDT PROGRAM

Start with our proprietary **TdT Synthesis Panel,** optimized for non-native nucleotide analogs needed for controlled DNA/RNA synthesis, and leverage **Cantera**, our state-of-the-art protein engineering platform, to tailor **Terminal Deoxynucleotidyl Transferase (TdT) enzymes for your specific synthesis needs.**

The Accel TdT program ensures the development of TdT enzymes that enable the highest performance in controlled enzymatic synthesis, supporting innovative research and development.

BENEFITS

- **Proprietary Portfolio of TdT Enzymes Ready for Evolution:** Commercially available TdT enzymes are not optimized for non-native nucleotide analogs needed for controlled synthesis of DNA/RNA sequences. Blikka Genomic's offers a diverse portfolio of proprietary Terminal Deoxynucleotidyl Transferase (TdT) enzymes sourced from artificial chimeric origins. These sequences serve as a robust backbone that can be evolved and tailored to meet specific needs.
- **Protein Engineering Platform:** Our specialized protein engineering platform, Cantera, leverages over 11 years of experience, employing a structured, data-driven process to generate and optimize enzyme candidates. By integrating deep sequencing for faster learning cycles, Cantera ensures efficient production and delivery of final enzyme products.
- **OEM Licensing and Custom Manufacturing:** Full access to our proprietary library of TdTs with OEM licensing agreements. Have enzymes manufactured at Blikka with custom labeling requirements or opt for manufacturing at your own facility , integrating advanced enzymatic solutions seamlessly into your production processes.
- **Sustainability Impact:** The Accel-TdT Program supports sustainable biotechnology by reducing harmful chemical waste and lowering energy consumption, compared to traditional chemical synthesis methods. This not only enhances your research but also contributes to a more sustainable future.

HOW IT WORKS

- **Test a TdT:** Begin by testing a TdT from our TdT Synthesis Panel. You can order the TdT as it is in custom-size formats, or evolve it.
- **Gathering Data:** We start by collecting comprehensive data from scientific literature, databases, experiments, and advanced bioinformatics tools to identify key residues for modification.
- **Library Construction:** We generate diverse variants in silico to be tested in the lab.
- **High Throughput Screening:** We produce and screen mutants in the lab to identify the best variants.
- **Selection of Best Mutants:** We conclude by conducting an in-depth characterization of top enzymes to evaluate performance metrics such as activity, stability, and kinetics.

The Starting Point: **TdT Synthesis Panel**

Our versatile panel offers **6 proprietary and engineered Terminal Deoxynucleotidyl Transferase (TdT) enzymes,** designed for high coupling efficiency with both natural and modified nucleotides, range of thermostability, and low bias.

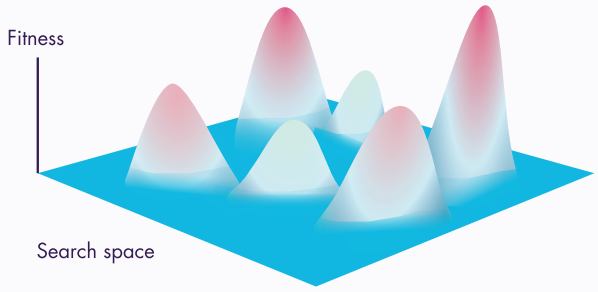
These enzymes serve as foundation to be tested and select the one that works best for customization in **co-development with our Product Engineering team.**

KEY FEATURES

- **Thermostability:** Functions efficiently at different temperatures.
- **Compatibility with Blocked Nucleotides:** Works effectively with 3'O-NH2 reversibly blocked dNTPs.
- **High Coupling Efficiency & Low Bias:** Delivers excellent coupling efficiency and low bias with natural DNA nucleotides, modified DNA nucleotides, and natural RNA nucleotides, ensuring high-quality synthesis outcomes.
- **pH Resistance:** Stable and functional across a broad pH range (pH 5-9), providing flexibility in various synthesis conditions.

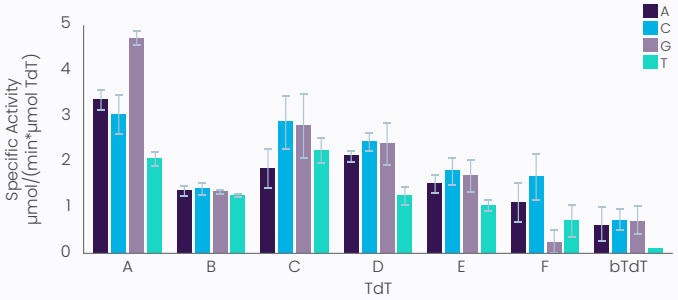
TdT Synthesis Panel Enzymes	Features				
	Coupling efficiency			Thermostability	pH resistance range
	Natural DNA nucleotides (dNTPs)	Modified DNA nucleotides (3'O-NH2 reversibly blocked dNTPs)	Natural RNA nucleotides (rNTPs)	Tm	
TdT A	++++	++++	+++	54°C	pH 5-9
TdT B	++	++	++	46°C	
TdT C	+++	+++	+++++	51°C	
TdT D	++	+++	+++	52°C	
TdT E	++	+	++	38°C	
TdT F	+	+++++	++++	48°C	

DIVERSITY IN TDT BACKGROUNDS



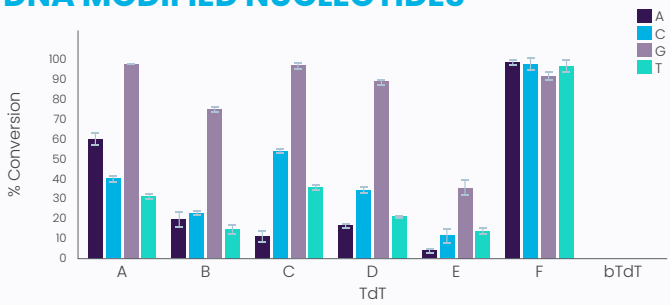
6 TdT from different sources Tailored to precisely match your unique requirements, ensuring the best possible fit for you.

INCORPORATION OF DNA NATURAL NUCLEOTIDES



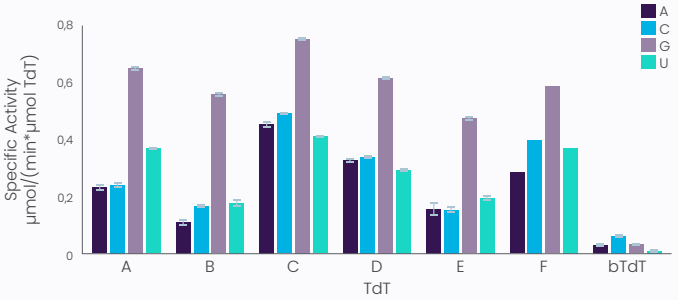
Addition of natural deoxyribonucleotides. Enzymes were incubated with a 1:10 oligo:dNTP ratio for 1 minute at 37°C.

INCORPORATION OF DNA MODIFIED NUCLEOTIDES



Addition of modified nucleotides. Enzymes were incubated with a 1:10 oligo:dNTP ratio for 30 minutes at 37°C. Bovine TdT didn't show activity.

INCORPORATION OF RNA NATURAL NUCLEOTIDES



Addition of natural ribonucleotides. Enzymes were incubated with a 1:10 oligo:dNTP ratio for
30 minute at 37°C.

blikka® KURA

CATALYZING MULTI-OMICS EVOLUTION THROUGH *SMART ENZYMATIC DEVELOPMENT*

Blikka Genomics, the newest division of Kura Biotech, operates in the fields of DNA sequencing and controlled enzymatic synthesis. Guided by our vision to catalyze multi-omics evolution through smart enzymatic development, and leveraging Cantera, our state-of-the-art protein engineering platform, Blikka develops high-performance products that drive scientific breakthroughs.

A LEGACY OF EXCELLENCE

For over a decade, Kura Biotech has set industry standards in enzyme solutions, particularly in toxicology. Blikka Genomics extends this legacy into genomics and multi-omics, leveraging deep expertise to provide precision-engineered tools for groundbreaking research.

PRECISION THROUGH CANTERA

At the heart of Blikka Genomics capabilities is Cantera, our advanced protein engineering platform. Combining over 11 years of experience with data-driven insights, Cantera structures the protein engineering process to optimize and measure each stage, ensuring efficient production and delivery of final products.

Blikka Genomics commitment to precision, innovation, and sustainability ensures researchers have the tools they need to achieve significant advancements in precision medicine and genomics. ***Join us in catalyzing multi-omics evolution through smart enzymatic development.***

WANT TO KNOW MORE?

Contact us at **sales@blikka.com** or visit **www.blikka.com**

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