KACTUS Introduces Ultra-Low Endotoxin KLK1 Proteins for Research

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KACTUS, a biotechnology research reagent provider based in Waltham, Massachusetts, announced the commercial availability of ultra-low endotoxin recombinant human kallikrein-1 proteins designed to support ischemic stroke and cardiovascular disease research.

KACTUS, a biotechnology company located in Waltham, Massachusetts, has made commercially available ultra-low endotoxin recombinant human kallikrein-1 (KLK1) proteins. These high-purity reagents were developed to meet the strict endotoxin requirements of research institutions conducting cell-based assays and preclinical studies focused on ischemic stroke and cardiovascular disease. The company's new line of recombinant human kallikrein proteins is now accessible to researchers in need of these specialized materials.

Ischemic stroke, a major contributor to long-term disability, affects approximately 795,000 Americans annually, as reported in the American Heart Association's 2024 statistical update.

Research is intensifying on the KLK protein family for its potential role in post-stroke recovery, specifically in protecting neural tissue and supporting vascular function. This crucial protein system plays a regulatory part in blood pressure, inflammation, and tissue repair, processes that are significantly impaired following cardiovascular events. KACTUS has written an article with more information on the role of KLK1 in cardiovascular disease.

To meet the rigorous demands of precision medicine, KACTUS has engineered ultra-low endotoxin KLK1 proteins specifically for stroke pathophysiology and therapeutic intervention studies. Endotoxin contamination is a known disruptor of both cell culture and in vivo models; these proteins are designed to minimize the introduction of unwanted biological variables, supporting carefully controlled and highly accurate research outcomes.

"Stroke research needs reagents that mirror real physiological conditions without bringing in artifacts from bacterial contamination," said Vincent Wu, representative at KACTUS. "The ultra-low endotoxin specifications help researchers figure out how kallikrein proteins actually influence stroke outcomes and recovery mechanisms."

KACTUS's KLK protein family undergoes rigorous purification to achieve endotoxin levels below 0.01-.001 EU per microgram of protein. This strict quality control is vital for sensitive cell culture and in vivo research models, aligning with NIH standards for reagents in translational research.

KACTUS utilizes a human protein expression system to develop its catalog of KLK enzymes. As opposed to protein expression in a bacterial system, this methodology minimizes other potential contaminants. This approach also ensures that proper post-translational modification of the enzyme occurs, preserving protein function and enzymatic activity during experimental development.

As reproducibility becomes a critical mandate in translational research, KACTUS is establishing a new gold standard for recombinant KLK enzymes. The biotechnology landscape has grown increasingly dependent on precision tools, where small trace contaminants can skew data and trigger false inflammatory responses in sensitive assays. Recognizing this industry-wide challenge, KACTUS has developed advanced purification protocols that go beyond expected industry benchmarks.

Trusted by leading research institutions across North America, the company?s meticulous manufacturing processes deliver ultra-low endotoxin reagents while fully preserving native enzymatic activity, a complex balance that many traditional production methods fail to achieve. By ensuring these proteins perform

consistently across different labs, diverse methodologies, and complex in vivo models, KACTUS provides the uncompromising lot-to-lot reproducibility required to study intricate cardiovascular and neurological mechanisms without contaminant interference. Ultimately, this steadfast commitment to reagent purity helps scientific teams minimize wasted resources, standardize their data, and accelerate the path toward novel therapeutic interventions.

ABOUT KACTUS

KACTUS is a biotechnology research reagent provider based in Waltham, Massachusetts, specializing in recombinant protein production for life sciences research. The company develops high-purity reagents for cardiovascular disease, neuroscience, and inflammation research applications.

Learn more at kactusbio.com.

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