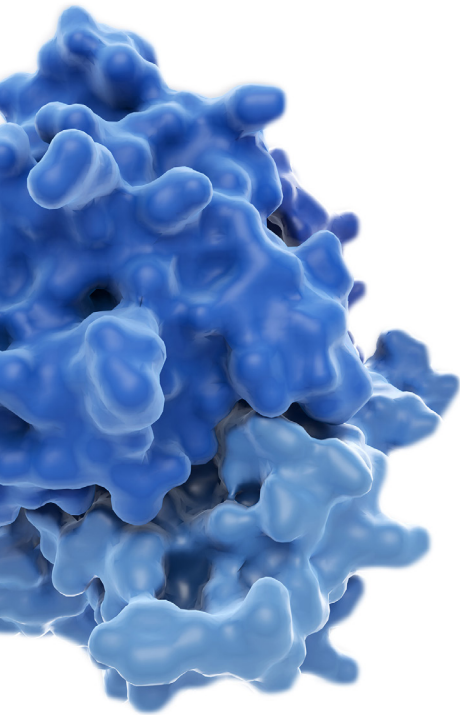




# Shenandoah CTGrade Recombinant Human Proteins

OPTIMIZE CELL PROLIFERATION AND FUNCTION FOR IMMUNOTHERAPY

# Shenandoah CTGrade Recombinant Human Proteins



Shenandoah CTGrade interleukins and growth factors are formulated to reduce variability and ensure predictable workflow performance in the proliferation and differentiation of T cells, natural killer (NK) cells, B cells, and chimeric antigen receptor T (CAR-T) cells.

Produced in *E. coli* systems, CTGrade recombinant human proteins support a variety of cell culture applications including activation, expansion, and differentiation.

Designed to support basic, translational, and clinical research, as well as commercial applications, and offer:

- High biological activity verified by a relevant bioactivity assay
- Low endotoxin levels
- $\geq 97\%$  purity
- High lot-to-lot consistency

Shenandoah CTGrade interleukins and growth factors complement our PRIME-XV portfolio of chemically defined and serum-free media and reagents.

## Making the Right Decision the First Time

When designing robust cell and gene therapy processes, making the right decision the first time is critical for delivering therapies to market.

Shenandoah CTGrade interleukins and growth factors are formulated to reduce variability and ensure predictable workflow performance in the proliferation and differentiation of T cells, natural killer (NK) cells, B cells, and chimeric antigen receptor CAR T cells.

Together with our unparalleled regulatory guidance and assurance of expected performance, CTGrade interleukins and growth factors help cell and gene therapy developers proactively deliver the full promise of their discoveries.





# Achieve Predictable Workflows and Reduce Variability with CTGrade Interleukins and Growth Factors

The predictability and performance of CTGrade interleukins and growth factors help cell and gene therapy developers accelerate delivery of life-changing therapies to market.

The biological activity of CTGrade interleukins and growth factors is standardized, where applicable to WHO International standards, providing cell and gene therapy developers consistent, lot-to-lot biological activity and performance.

The CTGrade products are manufactured in a facility that does not use or process beta-lactam containing materials. No animal- or human-derived materials were used during manufacturing or as ingredients. These products are manufactured, tested, and released in an ISO 9001:2015 certified facility following cGMP practices. USP chapter <1043> for ancillary materials has been considered in the manufacture of these products.

## Shenandoah CTGrade Recombinant Protein Ordering Information

Product Description	Catalog #	Size*	Additional Info
CTGrade rh IL-2 <sub>C126S</sub>	500-01	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh IL-3	500-04	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh IL-6	500-06	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh IL-7	500-07	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh IL-10	500-16	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh IL-15	500-08	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh IL-21	500-09	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.
CTGrade rh FLT-3 Ligand	500-03	50 µg 100 µg 1 mg	Manufactured following cGMP practices in a facility that does not use or process beta-lactam containing materials, no histidine tags, and 0.2 micron filtered. No animal- or human-derived materials were used during manufacturing or as ingredients.

\*Custom sizes and packaging available on request.

Access to Shenandoah's Research Use Only (RUO) recombinant proteins is also available on [www.irvinesci.com](http://www.irvinesci.com). This product line supports early-stage discovery of cell, gene, and tissue engineered therapeutics, as well as animal and preclinical models.

To discuss your requirements, contact us at [getinfo@irvinesci.com](mailto:getinfo@irvinesci.com) or visit our website at [www.irvinesci.com/contact-us](http://www.irvinesci.com/contact-us).

