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CAR-T Research and Development

Product Solution

Novoprotein Scientific Inc.

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Dedicated & Professional

Novoprotein Scientific Inc. (Novoprotein) is a high-tech enterprise with more than 10 years of extensive experience in the recombinant protein industry, focusing on protein technology, and advanced in R&D, production, sales, and application solutions to raw materials and techniques for biopharmaceuticals, in vitro diagnosis, mRNA vaccines, and basic life science research. Our principal products include target proteins and cytokines, recombinant antibodies, molecular enzymes and reagents, as well as providing related technical services. Novoprotein possesses R&D and manufacturing bases in Shanghai, Suzhou, and Heze.

novoprotein
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1 CAR-T Cell Therapy

CAR-T cell therapy, also known as chimeric antigen receptor T cell therapy, is achieved by modifying human T cells *in vitro* via genetic engineering and infusing these cells back into the patient. The modified T cells can recognize tumor cells in the body. They can efficiently kill tumor cells by releasing various effectors through immunization, so as to achieve the purpose of treating malignant tumors.

The modification of T cells is mainly the "installation" of the CAR molecules. CAR (chimeric antigen receptor) is a chimeric molecule in which a T cell receptor (TCR) is fused with the antigen recognition domain, such as the single-chain fragment variable (scFv) of a monoclonal antibody. Compared with TCR-mediated antigen recognition, the antigen recognition of CAR does not depend on the major histocompatibility complex (MHC). The successfully modified CAR-T cells directly recognize specific antigens through CAR molecules.

The whole production process of CAR-T cell therapy consists of 6 procedures, i.e., collection of peripheral blood mononuclear cells (PBMCs) from patients or healthy donors, T cells isolation and activation, *in vitro* gene modification of T cells, *in vitro* expansion of CAR-T cells, CAR-T cells quality monitoring, and infusion of CAR-T cells to the patient.

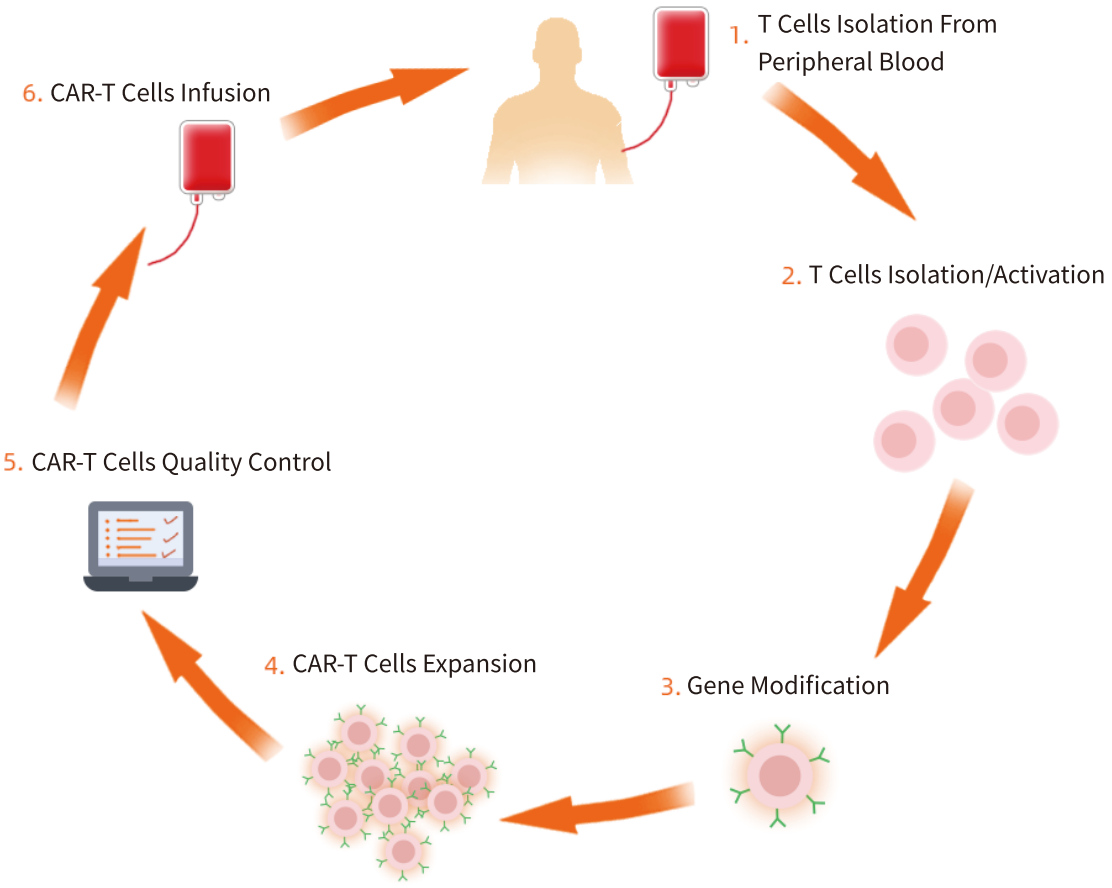


Figure 1. Schematic diagram of working procedures of CAR-T cell therapy

2 Quality Control of Raw Materials

Definition of Raw Matreials

Definition of Raw Matreials In 2018, the National Institutes for Food and Drug Control issued a notice on the "Considerations on Quality Control Testing Studies and Non-Clinical Studies of CAR-T Cell Therapy Products" to provide more specific guidance for the quality control studies and non-clinical evaluation studies of CAR-T cell products in China.

It is stated in the document that "Raw materials for the production of CAR-T cell products refer to all biological and chemical raw materials used in the production process that are not target components of CAR-T cell products, such as culture media, PBMC separation reagents, T cell sorting reagents, activators, cytokines (such as IL-2, IL-7, and IL-15), sera or serum alternatives."

Justifications

According to the "Requirements for Ancillary Materials and Excipients Used for Production of Biologics" in the Chinese Pharmacopoeia (current version, Volume III) and relevant foreign regulations, the risk grade of raw materials is evaluated and classified. For the same reagent or material, the priority for selection is as follows:

Pharmaceutical sterile products > pharmaceutical products, pharmaceutical grade > nonpharmaceutical grade, GMP grade > research grade, animal-free > animal origin materials.

GMP Quality Management System of Novoprotein

Standardized GMP Production Environment and Quality Management System

The clean workshop is established in compliance with the GMP for drugs. The GMP quality management system is implemented to ensure the controllability and traceability of materials and processes. In the DP workshop, filling is performed in accordance with the requirements for Class B sterile products, and pharmaceutical-grade excipients are used in the production of drug products.

Regulations for Production and Quality Control

Good Manufacturing Practice for Drugs (2010 Revision)
Good Manufacturing Practice for Drugs - Appendix of Cell Therapy Products (Draft for Comment)
Chinese Pharmacopoeia
USP Chapters <92> and <1043>
Ph. Eur. General Chapter 5.2.12

Quality Assurance

- Novoprotein implements a GMP quality management system for all GMP-grade products to ensure. the controllability and traceability of materials and processes. On-site audits are availiable.
- Animal-free materials and pharmaceutical-grade excipients are used for the production.
- Sterile, ampicillin-free, pathogens-free (HBV, HCV, HIV), mycoplasma-free.
- Endotoxin < 10 EU/mg, residual HCP < 0.005%, residual exogenous DNA < 100 pg/mg.
- High purity, high activity, and high lot-to-lot consistency.

(I) CAR Candidates Discovery

Novoprotein has more than ten years of experience in the development of target proteins. We have developed more than 600 target proteins, including immune checkpoint proteins, multi-pass membrane proteins, pMHC complex proteins, ADC therapy targets, CAR-T therapy targets, etc. These products are applicable in the development, functional evaluation, and quality control of antibody drugs such as monoclonal antibodies, bispecific/polyspecific antibodies, and ADCs.

Hot Product: High Activity CAR-T Target Proteins

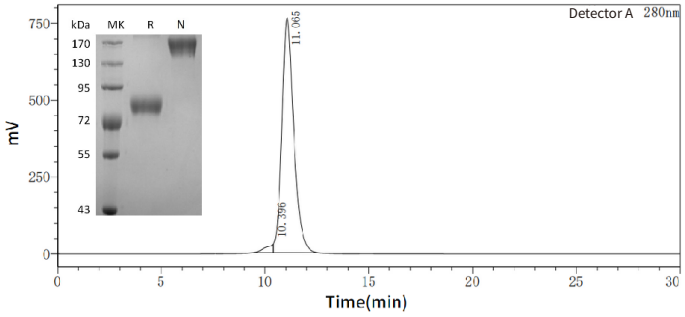
Product Features:

- Expressed by mammalian cells, with various varieties
- Available for different species: human, mouse, cynomolgus, rat, rabbit
- Multiple tags: His, Fc, mFc, Avi tag
- High activity: verified by ELISA/BLI
- High purity: verified by SDS-PAGE/SEC-HPLC
- High lot-to-lot consistency

Product Data

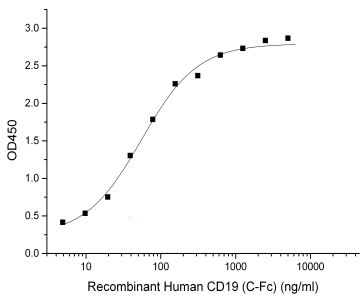
Recombinant Human CD19 (C-Fc) (Cat#C572)

High purity



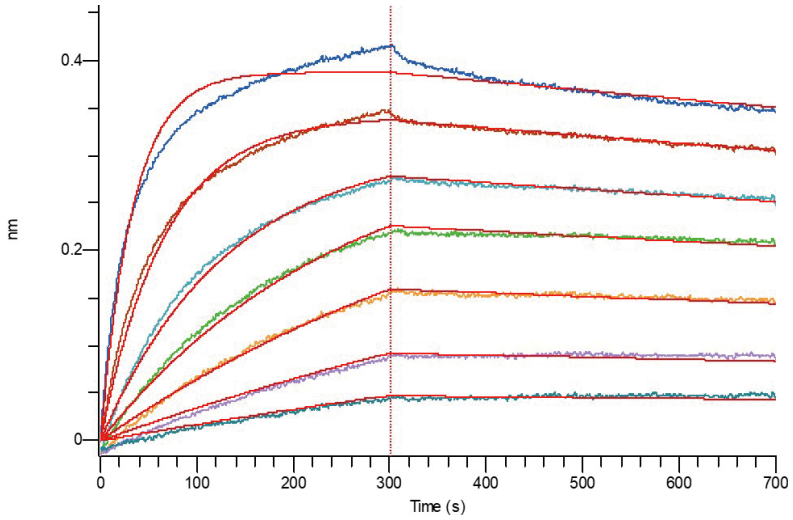
Greater than 95% as determined by SEC-HPLC & SDS-PAGE.

High activity



Immobilized Human FMC63 at 2 μg/mL (100 μL/well) can bind Human CD19-Fc (Cat#C572). The ED50 of Recombinant Human CD19-Fc (Cat#C572) is 55.28 ng/mL.

(I) CAR Candidates Discovery



Loaded Anti-Human CD19 mAb (Cat#NC057) on AMC Biosensor, can bind Human CD19-Fc (Cat#C572) with an affinity constant of 2.72 nM as determined in BLI assay.

Popular Targets of CAR-T:

BCMA	CD123	CD19	CD20	CD22	CD30
CD33	CD38	CD7	CD70	Claudin18.2	EGFR
EGFRvIII	EpCAM	FOLR1	FAP	GPC3	HER2
IL13RA2	MSLN	MUC1	MUC16	NKG2D Ligands	PSMA
ROR1					

(I) CAR Candidates Discovery

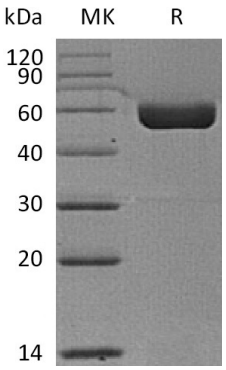
Hot Product: pMHC Complex Proteins

The current CAR-T therapies mainly target the antigens on the tumor cell surface. However, the proportion of cell surface antigens is very low and most antigens are intracellular. In order to extend the CAR-T therapy to intracellular antigens, TCR-like CAR-T therapy has emerged. TCR-like antibodies (TCRLs) bind to human leukocyte antigen (HLA) epitopes to target antigens in tumor cells. TCRLs can be transformed into CAR structures. CAR-T cell therapies mediated by TCRLs are effective for solid tumors. The pMHCs independently developed by Novoprotein are applicable to animal immunization, TCRLs, and TCR screening.

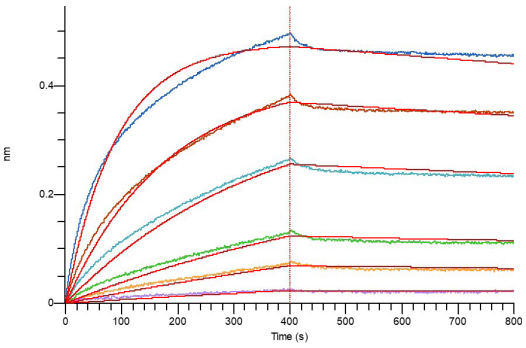
Product Features:

- Expressed by mammalian cells
- Mature process for MHC-peptide preparation
- A variety of typical peptides can be customized
- High purity, high affinity
- Monomer/tetramer can be customized

Product Data



Greater than 95% as determined by reducing SDS-PAGE. (Cat#C11X)



Loaded Anti-Human AFP mAb (Cat#NC075) on Protein A Biosensor, can bind HLA-A*0201 AFP complex Protein-His (Cat#C11X) with an affinity constant of 1.6 nM as determined in BLI assay.

Product Information

Cat. No.	Product Name
C10A	Recombinant Human HLA-A*0201 NY-ESO-1 Complex Protein (C-10His)
C10U	Recombinant Human HLA-A*0201 GP100 Complex Protein (C-10His)
C10W	Recombinant Human HLA-A*0201 WT-1 Complex Protein (C-10His)
C10X	Recombinant Human HLA-A*0201 HPV16 E7 Complex Protein (C-10His)
C11X	Recombinant Human HLA-A*0201 AFP Complex Protein (C-10His)

Cat. No.	Product Name
C16S	Recombinant Human HLA-A*0201 TP53 Complex Protein (C-10His)
C27D	Recombinant Human HLA-A*0201 HBsAg Complex Protein (C-10His)
C27F	Recombinant Human HLA-A*0201 HBsAg Complex Protein V2 (C-10His)
CY76	Biotinylated Human HLA-A*0201 GP100 Complex Protein (C-Avi-10His)
C512	Recombinant Human B2M (C-6His)

(II) Isolation/Activation of T Cells

Hot Product: Recombinant Humanized CD3 Monoclonal Antibody/CD28 Monoclonal Antibody, GMP Grade

The production of CAR-T cells starts with the PBMC collection through apheresis or from the peripheral venous blood of the patient. Since the composition of PBMCs varies greatly, it is necessary to use magnetic bead-based technology to isolate specific T cell subsets (CD4+, CD8+, CD25+, or CD62L+ T cells) to ensure the consistency of CAR-T cells as far as possible. At the same time, T cell activation is required for adequate transduction and amplification.

The first signal for T cell activation *in vivo* comes from the T cell receptor (TCR) specifically recognizing the MHC molecule-antigen polypeptide complex on the surface of the antigen presenting cell (APC); the interaction between the co-stimulatory molecule CD28 on the surface of the T cell and its ligand B7 (CD80/86) (second signal) can enhance the activation and proliferation of T cells. The activation of T cells *in vitro* can be achieved by binding anti-CD3 antibodies to CD3 molecules, and anti-CD28 can bind CD28 as a costimulatory molecule for T cell activation.

Novoprotein provides GMP-grade humanized Anti-CD3 and Anti-CD28 antibodies. Anti-CD3 is derived from the OKT3 through humanized modification, targeting CD3e; Anti-CD28 can bind CD28 as a costimulatory molecule for T cell activation.

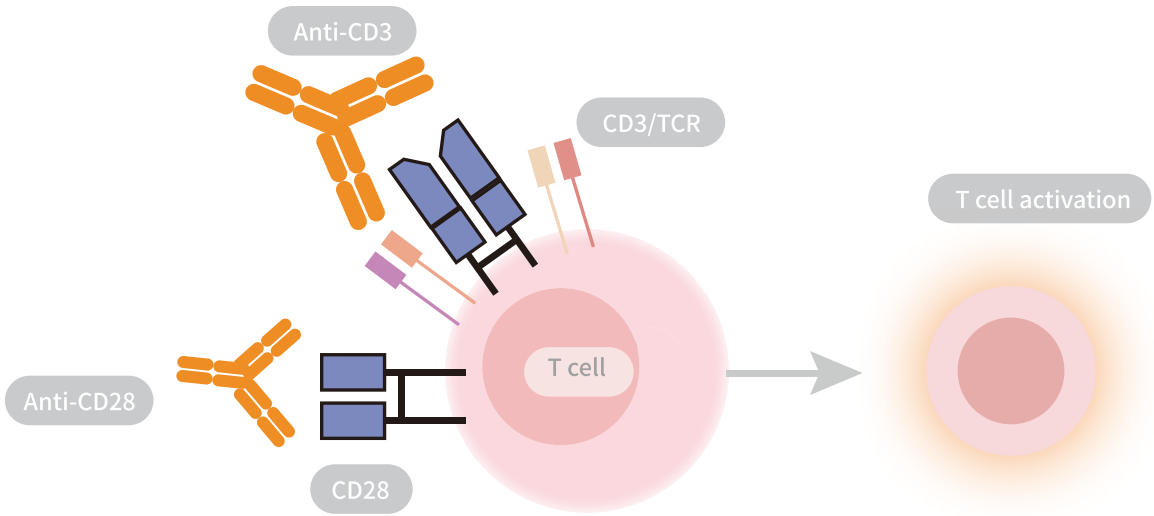


Figure 2. Schematic diagram of the mechanism of CD3/CD28 antibodies in T cell activation

Product Information

Cat. No.	Product Name
GMP-A018	Recombinant anti-Human CD3 mAb
GMP-A063	Recombinant anti-Human CD28 mAb

(III) Modification of T Cells

1. Gene Modification

The methods commonly used for *in vitro* gene modification of T cells include the nanoparticles/liposomes/electroporation-mediated mRNA transfection using the viral vectors carrying sequences encoding CAR receptors and transposons, or CRISPR/Cas9.

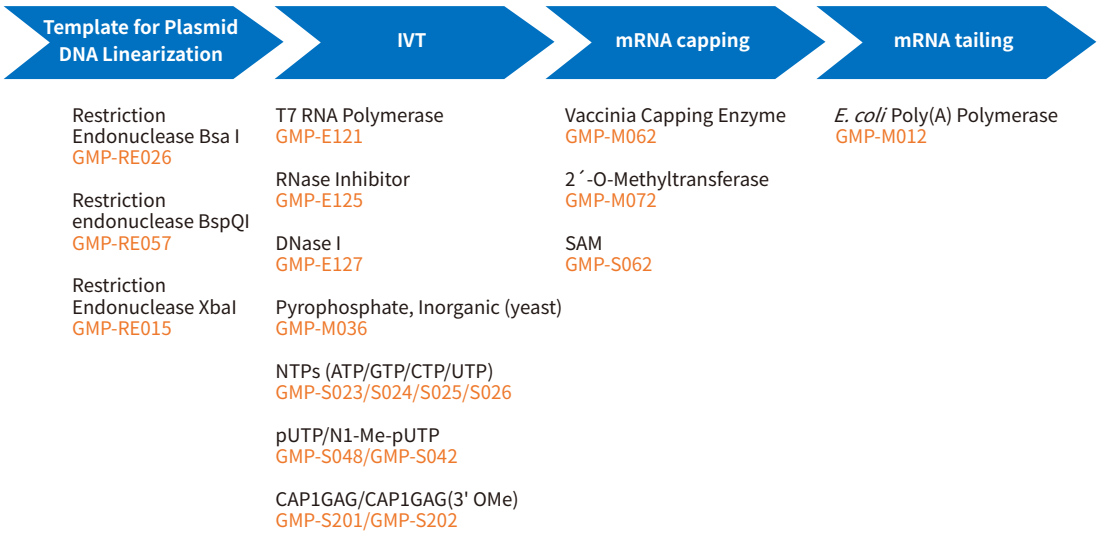
1) mRNA for Gene Modification

Hot Product: Enzymes and Reagents for mRNA Vaccines, GMP Grade

In recent years, the mRNA technique detonated by COVID-19 has developed rapidly. In addition to its use in the field of vaccines targeting infectious diseases, the mRNA technique has also gradually highlighted its advantages in the field of tumor treatment. Transposons obtained through *in vitro* transcriptional modification and mRNAs such as the CRISPR/Cas9 system have been successfully used in gene editing for T cells.

In addition, the success of COVID-19 mRNA vaccines has broadened the application of the "*in vivo* preparation of CAR-T" for the delivery of mRNA *in vivo*. Different from traditional CAR-T, the *in vivo* CAR-T cells infused in patients are not finished CAR-T cell products, but a "guide" to transform the T cells in the human body into CAR-T cells by themselves. The T-cell-targeted lipid nanoparticles (LNPs) are used to deliver the modified mRNA for CAR encoding, realizing the generation of instantly effective CAR-T cells *in vivo*. Since the *in vitro* production process of CAR-T is not required, the cost of CAR-T cell therapy is greatly reduced. At the same time, since the initial cells are not required, the issues concerning cell source are eliminated, let alone allogeneity and immunological rejection.

Novoprotein provides a serious of enzymes and reagents for *in vitro* mRNA transcription and modification. The products comply with GMP-grade production and quality management system, and have assisted many enterprises in the clinical phase of mRNA vaccines. The product has completed the FDA DMF filing, available for application in both China and the US. In addition to raw enzyme products, Novoprotein also provides full-process CRO service from sequence design to LNP packaging as quick solutions for customers who have initially established mRNA technology platforms.



(III) Modification of T Cells

2) CRISPR/Cas9 for Gene Modification

Hot Product: Cas9 Protein, GMP Grade

Using the CRISPR/Cas9 system to simultaneously destroy multiple gene loci, the resulting TCR (T cell receptor) and HLA-I (HLA class I) deficient CAR-T cells can reduce the occurrence of graftversus-host disease (GVHD) and immunological rejection. The product has been widely used in the development of general CAR-T cells. In addition, CRISPR-Cas9 technology can also improve the function of CAR-T cells by knocking out the genes encoding signaling molecules such as PD1 and CTLA4 or genes encoding inhibitory T cell receptors.

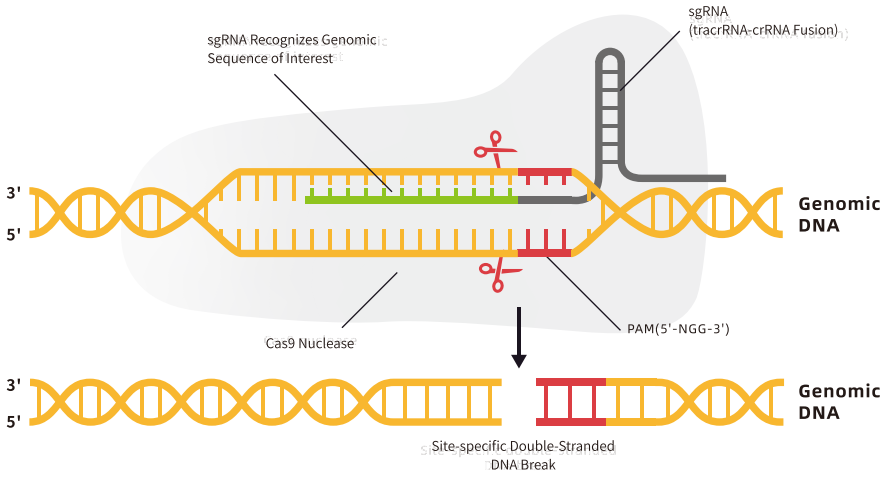


Figure 3. Schematic diagram of the mechanism of CRISPR/Cas9

Cas9 Protein, GMP Grade

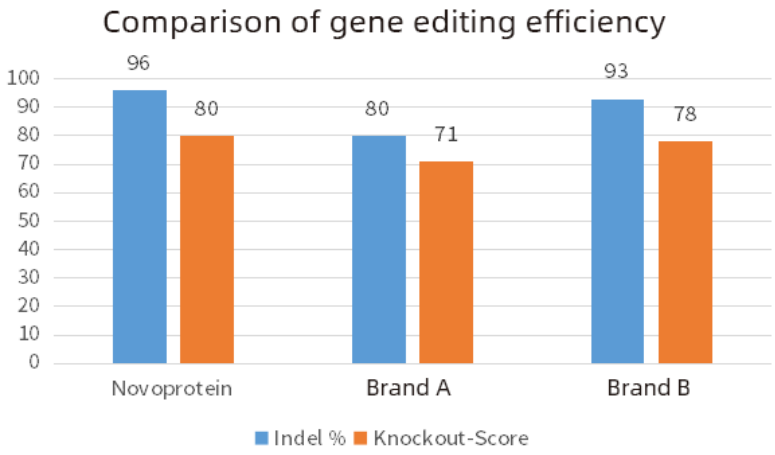
Product Features:

- Animal-free/ampicillin-free
- Compendial specifications
- Comprehensive QC testing
- High protein purity, ⩾ 95%
- High gene editing efficiency
- Good stability

(III) Modification of T Cells

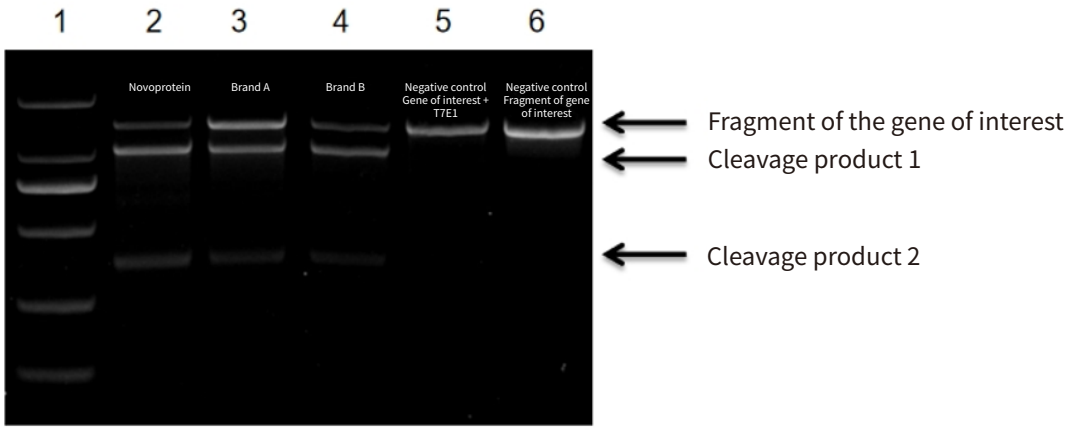
Product Data:

(1) Comparison of Cas9 Cleavage Efficiency in 293T Cells



The analytical results of the cell samples edited by different brands of Cas9 proteins showed that Novoprotein Cas9 protein is superior to its competitors in both editing efficiency and knockout score.

(2) T7EI Cleavage Efficiency



Different Cas9/sgRNA RNP complexes were delivered to the 293T cells by electroporation. After 48 h, the cells were collected and the genomic DNA was extracted for the T7E1 testing. The test results showed that under the same conditions, the cleavage efficiency of Novoprotein Cas9 product is superior to that of its competitors. Lane 1: marker; Lane 2: Novoprotein; Lane 3: brand B; Lane 4: brand A; Lane 5: negative control (fragment of gene of interest + T7EI);Lane 6: negative control (fragment of gene of interest)

Product Information

Cat. No.	Product Name
GMP-1701	Recombinant Cas9 endonuclease, GMP-Grade

(III) Modification of T Cells

2. Large-scale Production of Viral Vectors

Hot Product: BenzoNuclease®, GMP Grade

Viral vector-based cell transduction is the most commonly used technique for gene transduction of T cells. In the large-scale production and purification process of viral vectors, residual nucleic acids are the top priority of various quality control standards. Since DNA is stable and easy to reside during the production process, the final biological products with residual DNA will lead to uncontrollable risks if applied to the prevention and treatment of human diseases. Nucleases are mostly selected for the removal of nucleic acids generated during the production of viral vectors.

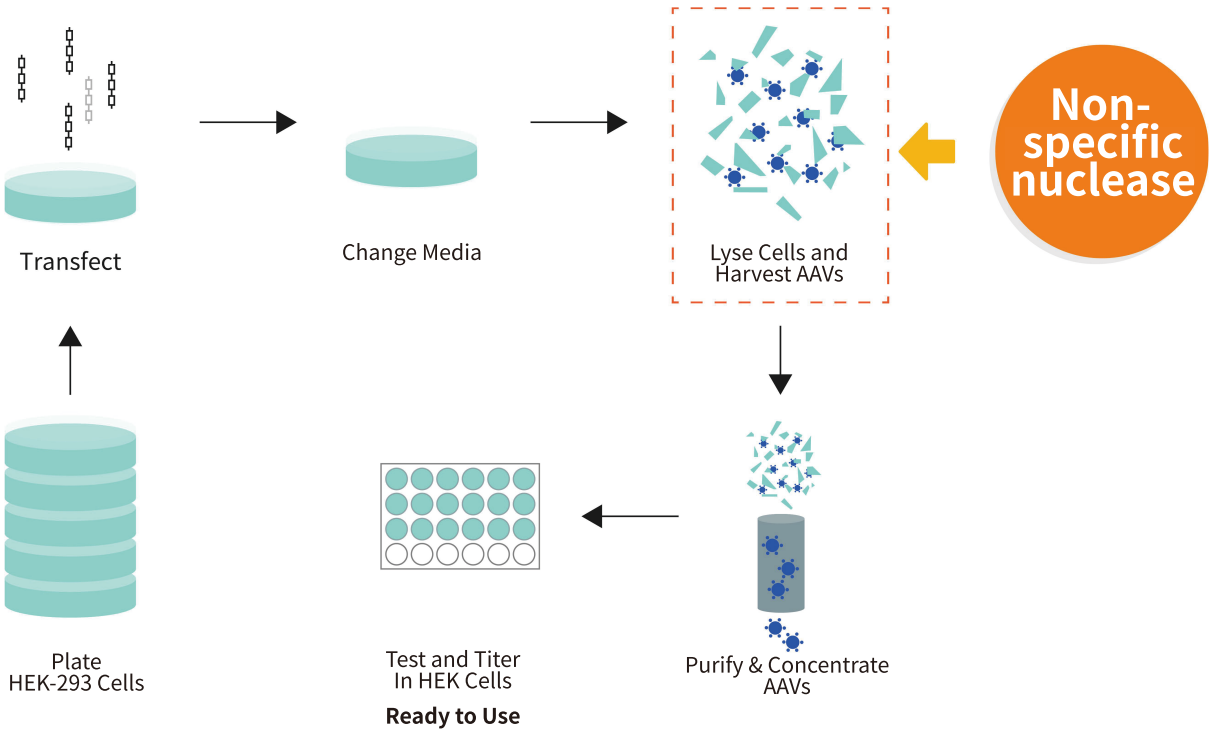


Figure 4. Manufacturing flow diagram of rAAV viral vectors
Image reference source: Mcclure C, Cole K, Wulff P, et al. Production and Titering of Recombinant Adeno-associated Viral Vectors[J]. J Vis Exp, 2011(57).

BenzoNuclease®

Novoprotein provides BenzoNuclease® manufactured under GMP conditions, which is animal-free and ampicillin-free. BenzoNuclease® can efficiently degrade DNAs and RNAs of all forms (single-/double-stranded or linear/circular/supercoiled). The product is reliable in quality, performance, and supply capacity. The Drug Master Files (DMF) filing to U.S. FDA has been completed, meeting the specifications of the drug application. At the same time, a highperformance compatible residual non-specific nuclease test kit (detection range: 0.014–10 ng/mL) with high sensitivity is provided.

Strict Quality Control and Production Standards Create Reliable BenzoNuclease® :

- Animal-free, ampicillin-free
- Protein purity ⩾ 99%
- Without protease activity
- Bacterial Endotoxin level < 0.01 EU/KU

Element Standard Criteria	Acceptance Criteria
Appearance clear, transparent liquid	Transparent liquid
Visible Particles Compliant	Compliant
pH 7.5–8.5	7.5–8.5
Activity 250–400 U/ μ L	250–400 U/μL
Specific Activity ⩾ 1.1 × 106 U/mg	⩾ 1.1 × 10^6 U/mg
Purity ⩾ 99%	⩾ 99%
Protease Activity No protease activity detectable	No protease activity
Bacterial Endotoxins Residues < 0.01 EU/KU	< 0.01 EU/KU
Host-cell Protein Residues ⩽ 0.005%	⩽ 0.005%
Sterility Compliant	Compliant
Heavy Metals Residues ⩽ 10 ppm	⩽ 10 ppm

DMF Filing, Meeting the Specifications of Drug Application:

Your submission was successfully processed into the CDER Electronic Document Room, and is available to the assigned review division.

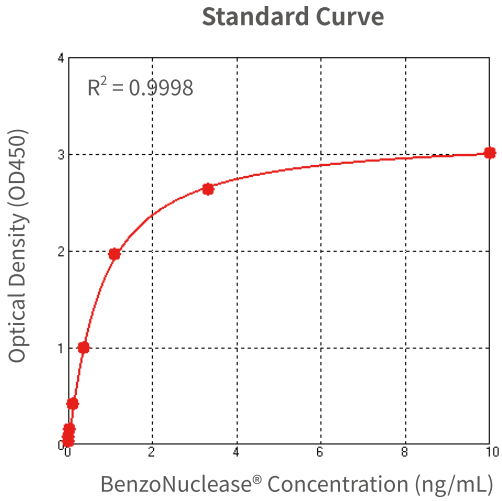
Application Type/Number: MF035864

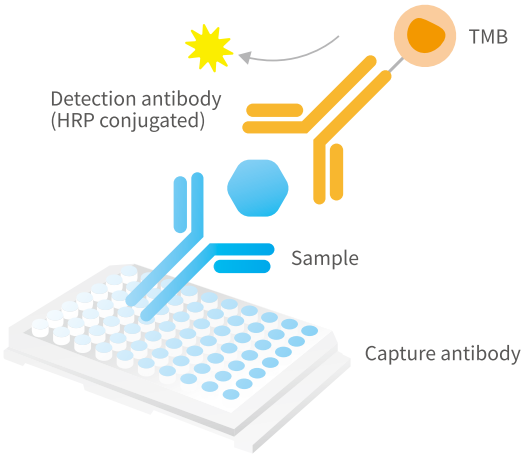
Product Information

Cat. No.	Product Name
GMP-1707	BenzoNuclease®, GMP-Grade

BenzoNuclease® Elisa Kit

BenzoNuclease® ELISA Kit can detect and quantitatively analyze the residual of BenzoNuclease® in recombinant viral vectors and vaccine production with high sensitivity and specificity. The sensitivity is 0.014 ng/mL and the detection range is 0.014–10 ng/mL.





Step 1: Test sample added to the well

Step 2: Detection Antibody added to the well

Step 3: Colorimetric detection with TMB substrate

Product Information

Cat. No.	Product Name
PA018	BenzoNuclease® ELISA Kit

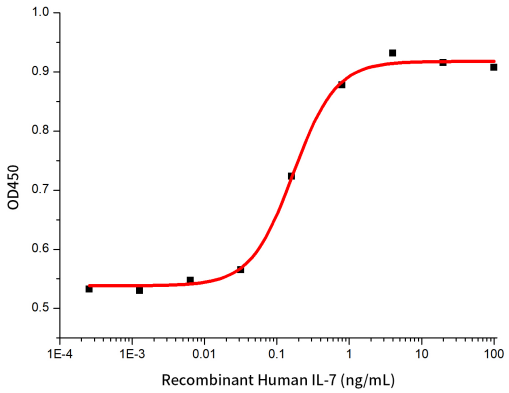
(IV) CAR-T Cell Expansion

Hot Product: Cytokines, GMP grade

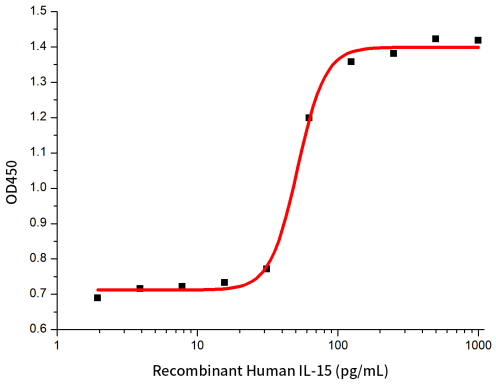
Large-scale *in vitro* expansion is required for both primary T cells and CAR-T cells obtained through gene modification to obtain the required dose for subsequent steps and treatment. Plenty of literature has pointed out that the cytokines IL-2/IL-7/IL-15 play an important role in T cell proliferation, T cell subpopulation growth, and improvement of the efficacy and durability of CAR-T products.

Novoprotein provides GMP-grade and FDA DMF filed cytokines IL-2/IL-7/IL-15.

Product Data
(1) High Activity

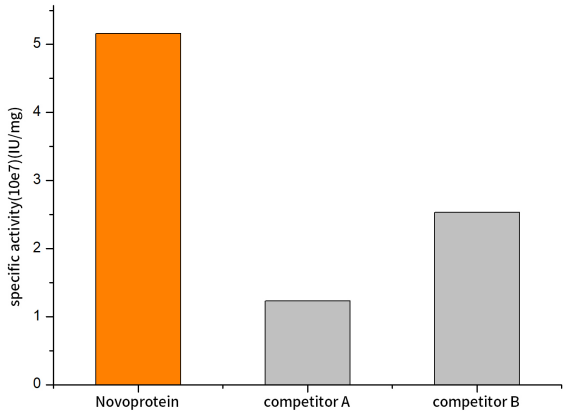


Measured in a cell proliferation assay using PHA-activated human peripheral blood mononuclear cell (PBMC). The ED50 for this effect is 168.10 pg/mL. The specific activity of Recombinant human IL-7 (Cat#GMP-CD47) is > 1.0×10^8 IU/mg, which is calibrated against human IL-7 WHO International Standard (NIBSC code: 90/530)



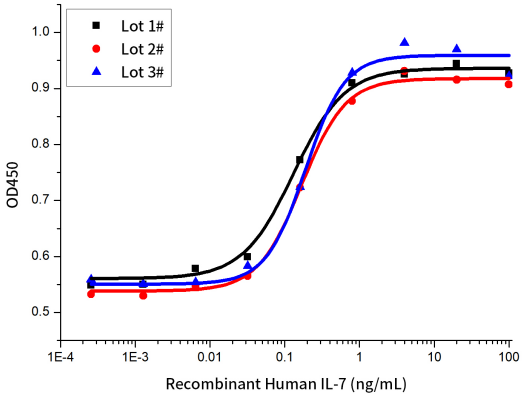
Measured in a cell proliferation assay using CTLL-2 mouse cytotoxic T cells. The specific activity of Recombinant human IL-15 (Cat#GMP-C016) is > 1.0×10^7 IU/mg, which is calibrated against human IL-15 WHO International Standard (NIBSC code: 95/554)

(IV) CAR-T Cell Expansion



The activity of GMP Human IL-15 Protein (Cat#GMP-C016) was compared to another commercially available product.

(2) High Lot-to-Lot Consistency



Three independent lots were tested for activity and plotted on the same graph to show lot-to-lot consistency of GMP Human IL-7 Protein (Cat#GMP-CD47).

Product Information

Cat. No.	Product Name
GMP-C013	Recombinant Human IL-2 DMF Filed
GMP-CD47	Recombinant Human IL-7 DMF Filed
GMP-C016	Recombinant Human IL-15 DMF Filed

(IV) CAR-T Cell Expansion

Hot Product: NovoNectin®, GMP Grade

NovoNectin® (recombinant human Fibronectin, FN-CH296) can be used for cell attachment, spreading, differentiation, and proliferation. It can greatly improve the infection efficiency of retroviruses on mammalian cells. VLA-4 and VLA-5 on the cell surface bind to the CS-1 site and the cell-binding domain on NovoNectin®, respectively, and the retroviral vector binds to the heparin-binding domain, thus promoting the transfection efficiency of retroviruses and lentiviruses on cells. NovoNectin® can be mixed with humanized monoclonal antibody CD3 for the coating to enhance T cell amplification.

Recombinant Human NovoNectin® is expressed by *E. coli* and is manufactured using animal-origin-free raw materials. Corresponding drug products are manufactured with pharmaceutical-grade excipients. The manufacturing follows the "Good Manufacturing Practice for Drugs (2010 Revision)" with strict control of residual bacterial endotoxin, residual host cell protein, and residual exogenous DNA to ensure product quality, safety, and efficacy.

Recommendations for Use:

NovoNectin® for plate coating:

1. Calculate the amount of NovoNectin® required on the basis of 5 μg/cm^2 coating area and dilute the protein mother liquor to 20–100 μg/mL with normal saline;
2. Add the protein mother liquor to the coated vessel to cover the vessel surface and allow it to stand at room temperature for 2 h or at 4 ° C overnight;

* Add 0.5 mL/well to the 24-well plate; add 2 mL/well to the 6-well plate or 35 mm dish; do not use preprocessed culture vessels.

Viral transfection:

1. Add the virus supernatant onto the NovoNectin®-coated plate at 125–250 μL/cm^2;

* MOI = 1, virus titer > 1 × 10^8.

2. Allow standing at 32–37 ° C for 4–6 h for complete virus adsorption;

* In the case of a lower virus titer, the plate can be centrifuged at 1000–2000 g, 32 ° C for 2 h after the virus is added.

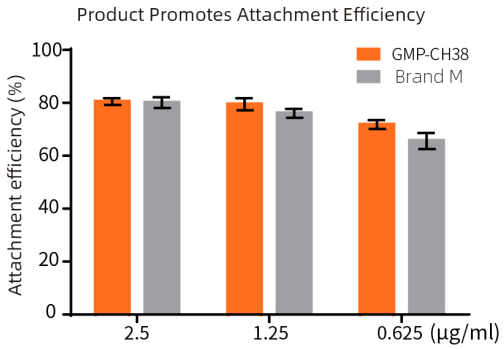
3. Prepare the target cells to a suspension of 0.2–1 × 10^5 cells;

* The target cells may be activated 24 h in advance.

4. Add the target cells to the previously processed dish at 0.5–2.5 × 10^4 cells/cm^2;
5. Incubate at 37 ° C for 2–3 days;

* In the case of a higher virus titer, the virus may be directly mixed with the cells and the mixture shall be added to the NovoNectin®-coated dish for culture at an appropriate density.

6. The infected cells can be cultured in a conventional way.



Measured by its ability to support Jurkat cell attachment and spreading when used as a substratum for cell culture.

Product Information

Cat. No.	Product Name
GMP-CH38	NovoNectin®, GMP Grade

(V) CAR-T Cell Quality Control

Hot Product: CARTEST® CD19 Detection Kit

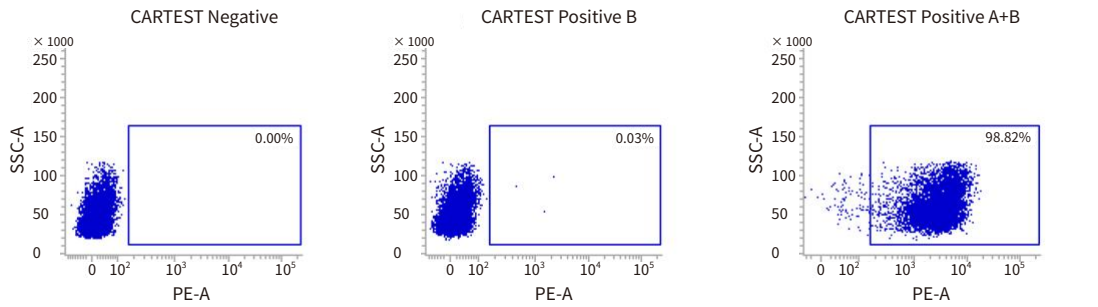
The quality control of cell therapy products involves safety, purity, potency, and homogeneity. These quality controls run through all stages of CAR-T production.

The homogeneity and purity of CAR-T cells mainly refer to the proportion of target cells (CAR-positive T cells). Currently, there are detection methods targeting different structural regions of CAR, including those targeting the CAR antigen-binding site (such as CD19 antigen or anti-scFv antibody), and those targeting the light chain or hinge region (such as anti-Fab antibody or Protein L).

CARTEST® CD19 Detection Kit can be used for the testing of CAR positive rate. CARTEST® CD19 specifically binds to anti-CD19 ScFv on the surface of CAR-T cells. After incubation with fluorescently-labeled Fc antibodies, the proportion of CAR-T cells can be detected by flow cytometry. This method is based on the specific antigen-antibody reaction, effectively reducing the false positive rate of ScFv detection via Protein L and ensuring more authentic and reliable data output.

Recommendations for Use:

1. Wash 1 × 10^6 cells to be tested twice with pre-cooled PBS, and centrifuge at 1500 rpm and 4 ° C for 5 min for each washing;
2. Resuspend the cells with 200 µL of solution A (it is recommended to reconstitute reagent A in sterile water, reconstitution volume: 2 mL/vial), and incubate at 4 ° C for 1 h;
3. After incubation, wash twice with pre-cooled PBS, and finally resuspend cells with 200 µL of PBS;
4. Add 5 µL of the antibody solution B to the cell suspension, protect from light and incubate at 4 ° C for 30 min;
5. After incubation, wash twice with pre-cooled PBS and resuspend with 200 µL of PBS. Perform tests on the analyzer.



Testing of anti-CD19 CAR-CHO cell positive rate by CARTEST® CD19 Detection Kit

Product Information

Cat. No.	Product Name
CT19	CARTEST® CD19 Detection Kit

3 List of GMP-grade Products

CAR-T Related Products

Cat. No.	Product Name
GMP-A018	Recombinant anti-Human CD3 mAb
GMP-A063	Recombinant anti-Human CD28 mAb
GMP-1647	Tscm Expander®
GMP-CH38	NovoNectin® GMP Grade
GMP-C013	Recombinant Human IL-2 DMF Filed
GMP-CD47	Recombinant Human IL-7 DMF Filed
GMP-C016	Recombinant Human IL-15 DMF Filed
GMP-1707	BenzoNuclease®, GMP-Grade
PA018	BenzoNuclease® ELISA Kit
CT19	CARTEST® CD19 Detection Kit

Stem Cell Culture Products

Cat. No.	Product Name
GMP-C687	Recombinant Human Activin A
GMP-C029	Recombinant Human EGF
GMP-C046	Recombinant Human FGF basic
GMP-CA82	Recombinant Human Flt-3 Ligand
GMP-CJ72	Recombinant Human HGF
GMP-CF63	Recombinant Human IL-3
GMP-C009	Recombinant Human IL-6
GMP-C023	Recombinant Human LR3 IGF-1
GMP-CB89	Recombinant Human Noggin
GMP-C099	Recombinant Human OSM
GMP-C199	Recombinant Human PDGF-BB
GMP-CX83	Recombinant Human R-Spondin 1
GMP-CD53	Recombinant Human SCF
GMP-CI56	Recombinant Human sCD40 Ligand
GMP-CA59	Recombinant Human TGF-beta 1
GMP-CJ95	Recombinant Human TPO
GMP-C395	Recombinant Human Vitronectin

3 List of GMP-grade Products

Functional Antibodies

Cat. No.	Product Name
GMP-A018	Recombinant anti-Human CD3 mAb
GMP-A063	Recombinant anti-Human CD28 mAb
GMP-A091	Recombinant anti-Human CD16 mAb
GMP-A052	Recombinant anti-Human CD52 mAb
GMP-A065	Recombinant anti-Human CD56 mAb
GMP-A075	Recombinant anti-Human NKG2D mAb

DC Cell Culture Products

Cat. No.	Product Name
GMP-C070	Recombinant Human IL-1 alpha
GMP-CG93	Recombinant Human IL-1 beta
GMP-CD03	Recombinant Human IL-4
GMP-CC79	Recombinant Human GM-CSF
GMP-C008	Recombinant Human TNF-alpha

NK Cell Culture Products

Cat. No.	Product Name
GMP-A091	Recombinant anti-Human CD16 mAb
GMP-CD47	Recombinant Human IL-7 DMF Filed
GMP-CI58	Recombinant Human IL-12
GMP-C016	Recombinant Human IL-15 DMF Filed
GMP-CD72	Recombinant Human IL-18
GMP-CC45	Recombinant Human IL-21

Support

Product Quality Control Specifications

All products have technical datasheet and COA, please e-mail to request:
support@novoprotein.com.cn

Or download via our website:
http://www.novoprotein.com

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