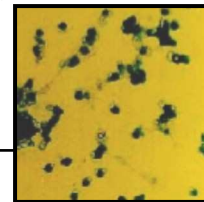


Clonetics™ Normal Human Chondrocyte Cell System

NHAC-kn



Introduction

Clonetics™ Chondrocyte Cell System contains Normal Human Chondrocytes-Knee (NHAC-kn) and optimized medium for their growth. Each system can quickly generate NHAC-kn cultures for experimental applications in joint research, physiology, cellular function and differentiation. Cryopreserved NHAC-kn are shipped in second passage. Proliferating NHAC-kn are shipped in third passage. Chondrocytes are specialized cells which produce and maintain the extracellular matrix of cartilage and are the only cellular component of cartilage. Although cartilage is not confined to articulating joints, articular cartilage, especially from weight bearing joints, is an area on intense research because arthritis, joint injuries and joint abnormalities cause wide spread disability. Clonetics™ Chondrocyte Cell System is convenient and easy to use, allowing the researcher to focus on results.

Chondrocytes are differentiated cells when isolated. They lose their differentiated phenotype after serial expansion in monolayer culture. By the 2nd or 3rd passage the cells are almost completely de-differentiated. Chondrocytes can be expanded in culture and then induced to re-differentiate.

The system is designed to generate NHAC-kn cultures for experimental applications including studies on the formation, breakdown, and regeneration of hyaline cartilage, Osteoarthritis research and the proliferation and differentiation of chondrocytes.

Clonetics™ Cells, Medium and Reagents are quality tested together and guaranteed to give optimum performance as a complete Cell System.

Cell System Components

- One Normal Human Chondrocyte Cell Product (Cryopreserved or Proliferating)
- One Normal Human Chondrocyte Cell Growth Medium BulletKit™ - 500 ml
Clonetics™ CGM™ BulletKit™ (CC-3216) contains one 500 ml bottle of Chondrocyte Basal Medium (CBM™) and CGM™ SingleQuots™ containing the following growth supplements: R³-IGF-1, 1 ml; bFGF, 2.5 ml; Transferrin, 0.5 ml; Insulin, 1 ml; FBS, 25 ml; GA-1000, 0.5 ml.
- Chondrocyte Differentiation Medium BulletKit™ (CC-3225) – 250 ml
Clonetics™ CDM™ BulletKit™ (CC-3225) contains one 250 ml bottle of Chondrocyte Differentiation Medium (CDM™ Basal Medium) and CDM™ SingleQuots™ containing the following growth supplements: R³-IGF-1, 0.5 ml; TGFβ-1, 1.25 ml; Transferrin, 0.5 ml; Insulin, 0.5 ml; FBS, 12.5 ml, GA-1000, 0.25 ml.
- One ReagentPack™ (CC-3233) Containing:

Trypsin/EDTA	100 ml
Trypsin Neutralizing Solution	100 ml
HEPES Buffered Saline Solution	100 ml

(All Solutions are specifically formulated for use with Clonetics Chondrocyte Cell Systems.)

Characterization of Cells

Cells are tested for the presence of Collagen Type II at primary and/or after re-differentiation. Cells are tested for sulfated proteoglycans with Alcian Blue stain after re-differentiation. Please note, the differentiation system does not attempt to re-differentiate the cells to hypertrophic state. The cells are re-differentiated to produce Collagen Type II but do not necessarily produce Collagen Type X upon re-differentiation.

Performance

Recommended Seeding Density	10,000 cells/cm ²
Typical time from subculture to confluent monolayer	4 - 9 days
Cumulative population doublings guaranteed using Clonetics™ System	15

Quality Control

All cells are performance assayed and test negative for HIV-1, mycoplasma, Hepatitis-B, Hepatitis-C, bacteria, yeast and fungi. Cell viability, morphology and proliferative capacity are measured after recovery from cryopreservation. Clonetics™ Media are optimized to grow specific types of normal human cells. Certificates of Analysis (COA) for each cell strain are shipped with each order. COA for all other products are available upon request.

Ordering Information

Cryopreserved Cells

CC-2550 NHAC-kn ≥750,000 cells

Proliferating Cells – Flasks and Multiwell Plates

CC-2550T25 T-25 Flask

CC-2550T75 T-75 Flask

CC-2550W96 96-well Plate

Other proliferating formats are available. Contact Scientific Support or refer to the Lonza website for details.

Growth Medium

CC-3216 CGM™ BulletKit™, CBM plus SingleQuots™ of Growth Supplements 500 ml

CC-3217 CBM, Chondrocyte Basal Medium 500 ml

CC-4409 CGM™ SingleQuots™, Formulates CBM™ to CGM™

Differentiation Medium

CC-3225 CDM™ BulletKit™, CDM™ Basal Media plus SingleQuots™ of Differentiation Reagents 250 ml

CC-3226 CDM™ Basal Medium 250 ml

CC-4408 CDM™ Differentiation SingleQuots™

Required Differentiation Reagents

CC-3234	Sodium Alginate	50 ml
CC-3235	CaCl ₂ Solution	500 ml
CC-3236	NaCl Solution	500 ml
CC-3237	Na Citrate Solution	100 ml
CC-4398	Ascorbic Acid*	0.5 ml

CC-3233	Chondrocyte ReagentPack™	
	Trypsin Neutralizing Solution	100 ml
	Trypsin/EDTA Solution	100 ml
	HEPES Buffered Saline Solution	100 ml

*Ascorbic acid is necessary for maturation and deposition of all types of collagen. Please review the Clonetics™ Articular Chondrocyte Instructions (AA-1024) for details concerning how to use Ascorbic Acid.

When placing an order or for technical service, please refer to the product numbers and descriptions listed above. For a complete listing of all Clonetics™ Products, refer to the Lonza website or the current Lonza catalog. To obtain a catalog, additional information or technical service you may contact Lonza by web, e-mail, telephone, fax or mail.

Product Warranty

CULTURES HAVE A FINITE LIFESPAN IN VITRO. Lonza guarantees the performance of its cells only if Clonetics™ Media and Reagents are used exclusively, and the recommend protocols are followed. The performance of cells is not guaranteed if any modifications are made to the complete Cell System. Cryopreserved NHAC-kn are assured to be viable and functional when thawed and maintained properly.

THESE PRODUCTS ARE FOR RESEARCH USE ONLY. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or in vitro procedures.

WARNING: CLONETICS™ AND POIETICS™ PRODUCTS CONTAIN HUMAN SOURCE MATERIAL, TREAT AS POTENTIALLY INFECTIOUS. Each donor is tested and found non-reactive by an FDA approved method for the presence of HIV-1, Hepatitis B Virus and Hepatitis C Virus. Where donor testing is not possible, cell products are tested for the presence of viral nucleic acid from HIV, Hepatitis B Virus, and Hepatitis C Virus. Testing can not offer complete assurance that HIV-1, Hepatitis B Virus, and Hepatitis C Virus are absent. All human sourced products should be handled at the Biological Safety Level 2 to minimize exposure of potentially infectious products, as recommended in the CDC-NIH Manual, [Biosafety in Microbiological and Biomedical Laboratories](#), 5th Edition. If you require further information, please contact your site Safety Officer or Scientific Support.