

A Snapshot of Expression with CellCover

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CellCover

CellCover was developed for fast “one step” stabilizing of biomolecules in life science research. CellCover is a non-toxic formulation for protecting DNA, RNA and protein in human and animal cells and tissues, including tumors and cultured cells.



How it works

As soon as cells get exposed to CellCover their metabolic state is frozen – without applying low temperatures (“liquid freezing”). Synthesis and turnover of biomolecules are stalled. This includes instant disruption of cellular degradation pathways. Chemical degradation is inhibited with CellCover as well, both leading to exceptional stabilization of DNA, RNA and protein, thus giving a snapshot of the expression status of a cell.

Passion for molecules

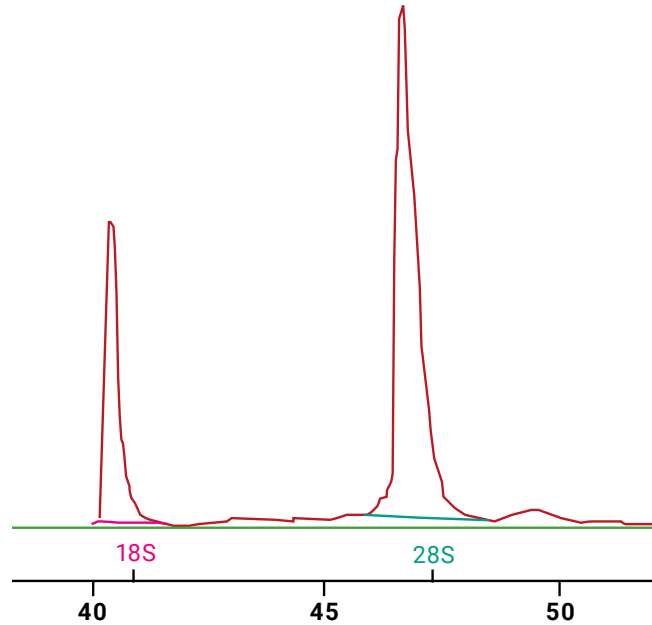
Anacyte Laboratories was founded by a team of scientists, having the same every day experience in research: missing tools to protect biomolecules in valuable experimental samples from degradation by a convenient and safe procedure. Combining knowledge and expertise led to the development of CellCover and to subsequent foundation of Anacyte Laboratories for sharing it with other scientists.

Our passion for molecules drives us to improve our products continuously. In collaboration with partners and customers Anacyte Laboratories concentrates on development of integrative multi-analytic tools. Development, production and customer support are the underlying principles of our company.

High RIN Values

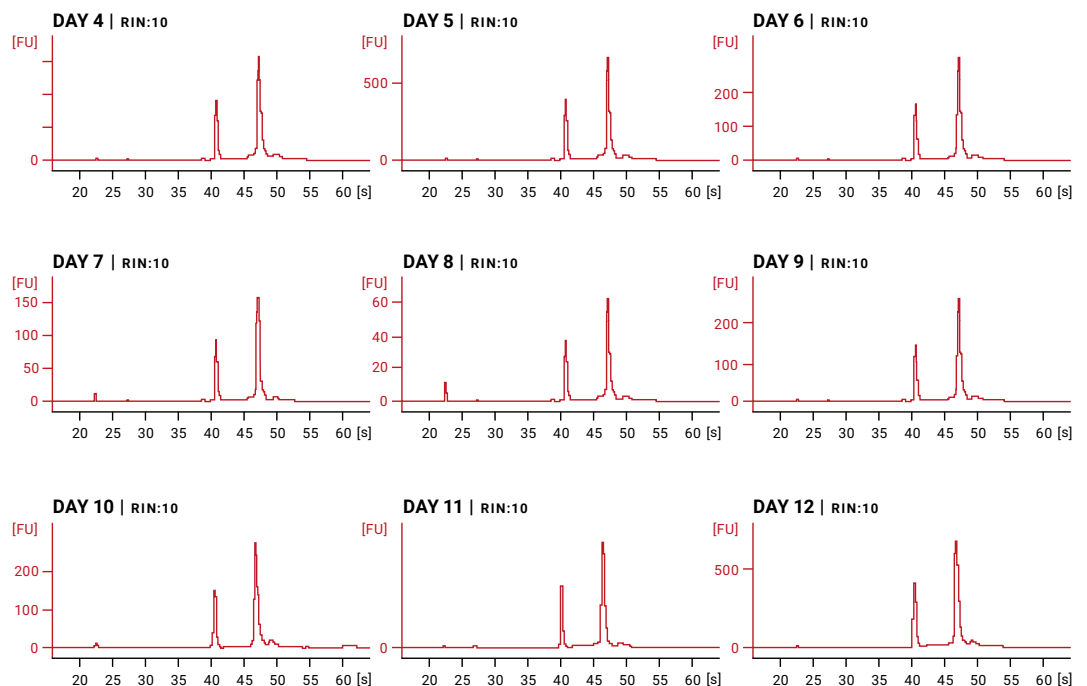
CellCover fixed cells allow isolation of RNA with high RIN values. Even integrity of high molecular weight RNA is protected (e.g precursor rRNA, which are normally degraded after applying commonly used standards procedures) – and there is no need to hurry!

Standard RIN analysis of RNA



Cultured cells (SKMel-28) stored for up to 12 days in CellCover at 4°C. RNA was isolated and its integrity was analysed with standard procedures. Results show a stable RIN value of 10 from first till last day of the time course.

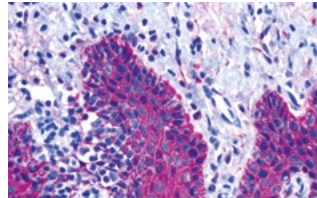
Time course



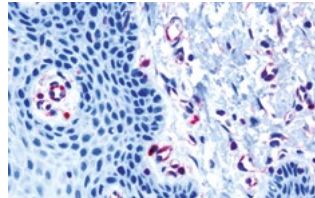
Morphology and Immunogenicity

CellCover stabilizes morphology of cells in suspension, biopsies or tissue and is compatible with morphological analyses and staining procedures, like immunocytochemistry or flow cytometry.

Immunohistochemistry



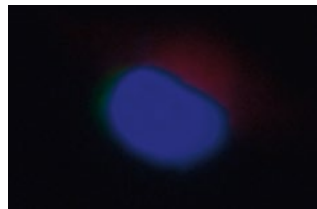
CK Pan



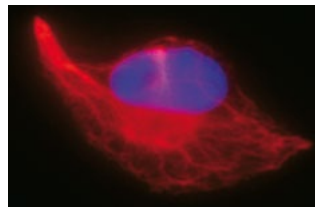
CD31

CellCover's liquid freeze effect allows visualization of formalin sensitive epitopes like Vimentin, enabling new insights in cellular structure and architecture.

Immunocytochemistry



Formalin

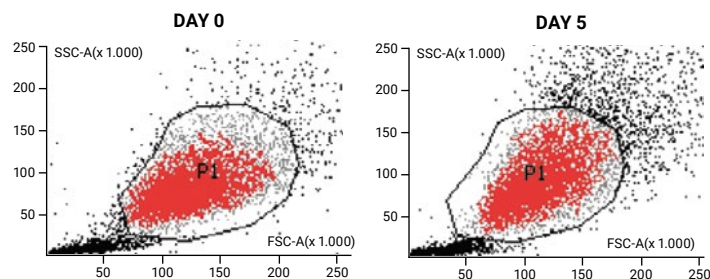


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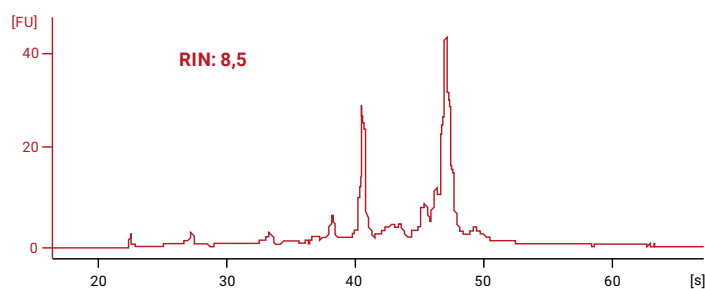
Double Analyses

Cells treated with CellCover maintain morphology for several days. Epitopes are protected and can be stained later. The unique feature of CellCover is the possibility to combine RNA and protein analysis of a given cell. Highly intact RNA can be isolated from cells in which protein has already been stained by immunolabeling.

Initial Protein Analysis

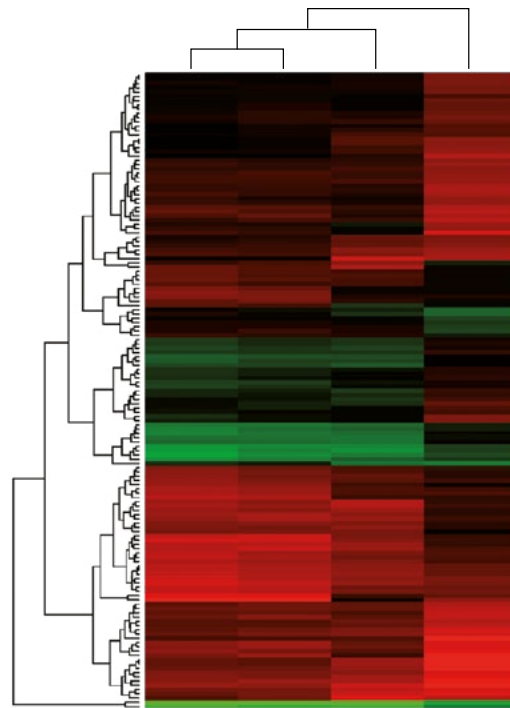


Followed by RNA Isolation



Benefits for BioBanking

Slow sample processing influences integrity and quality of the tissue sample. With removal of cells or tissue from its environment, expression pattern begins to change. CellCover protects tissue against adverse environmentally induced expression changes, without altering the morphology of tissue.



CellCover maintains expression pattern of genes close to native situation, allowing all downstream processes needed in modern BioBanking.

The example shows four tissue specimens: directly frozen, or kept for three hours in CellCover, in competitor's product or in 0,9% NaCl at room temperature (from left to right).

Microarray analysis

CellCover

Mechanism

CellCover inhibits molecular machines, leading to immediate stop of synthesis and degradation of DNA, RNA and protein.

Characteristics

CellCover maintains sample integrity and sample quality, compatible with morphological analyses and molecular downstream applications, also compatible with subsequent formalin fixation, paraffin embedding and morphological analysis.

Advantages

No risk of improper storage.
High RIN values of RNA.
Maintenance of expression status "as is".



www.anacyte.com/distributors

Selected Research Publication

Nature Methods 2017:

Seq-Well: portable, low-cost RNAsequencing of single cells at highthroughput

Todd M Gierahn, Marc H Wadsworth II, Travis K Hughes, Bryan D Bryson, Andrew Butler, Rahul Satija, Sarah Fortune, J Christopher Love & Alex K Shalek

PMID: 28192419, *Nature Methods*, Volume 14, pages395–398 (2017)

Briefings in Functional Genomics 2017:

Application of single-cell sequencing in human cancer

Mattias Rantalainen

PMID: 29106464, *Briefings in Functional Genomics*, Volume 17, Issue 4, July 2018, Pages 273–282

Scientific Reports 2016:

Disabled-2 is a negative immune regulator of lipopolysaccharide-stimulated Toll-like receptor 4 internalization and signaling

Wei-Shan Hung, Pin Ling, Ju-Chien Cheng, Shy-Shin Chang & Ching-Ping Tseng

PMID: 27748405, *Scientific Reports*, Volume 6, Article number: 35343 (2016)

J Vet Med Sci 2016:

Method for isolating pure bovine gonadotrophs from anterior pituitary using magnetic nanoparticles and anti-gonadotropin-releasing hormone receptor antibody

Kiran Pandey, Ashrafun Nahar & Hiroya Kadokawa

PMID: 27430292, *J Vet Med Sci*. 2016 Nov; 78(11): 1699–1702

CONTACT

TEL +49 (0)40 60941702-0

FAX +49 (0)40 60941702-9

E-MAIL info@anacyte.com

WEB www.anacyte.com

ADDRESS

Anacyte Laboratories GmbH

Bahnhofstraße 8

21465 Reinbek, Germany

ANACYTE
LABORATORIES