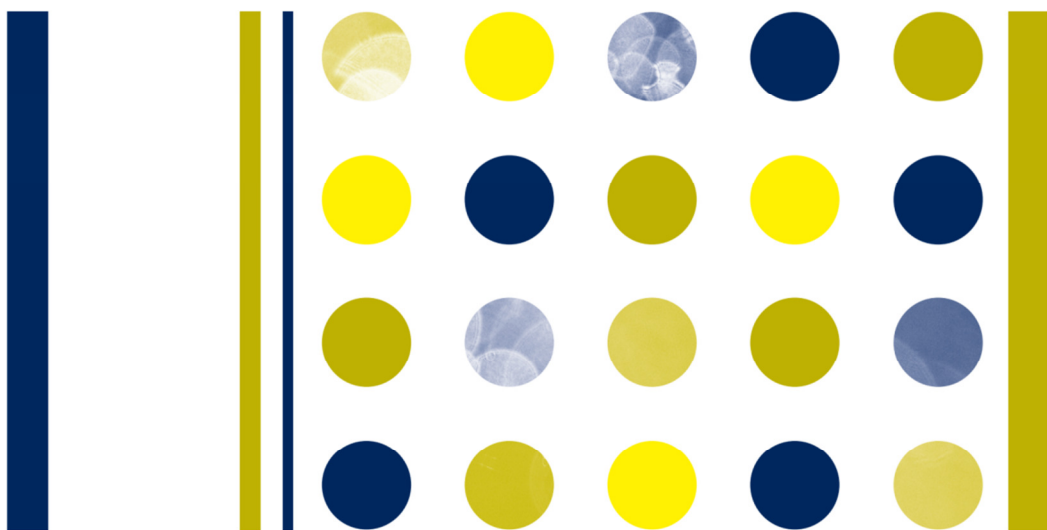




TICEBA NEWSLETTER



TICEBA NEWSLETTER

13 September 2011

2/2011

Dear madams and sirs,

It is once again time for our TICEBA NEWSLETTER. As you have already noted, our NEWSLETTER is now published in a new layout.

Not only has the appearance of our NEWSLETTER changed. Inside and around TICEBA many changes have taken place over the last few months.

Wait and see!

Enjoy exploring and discovering our NEWSLETTER!

Your team at TICEBA



Overview of our Topics

- ✦✦ Product Overview
- ✦✦ News
- ✦✦ Innovations at TICEBA
- ✦✦ New in our Team
- ✦✦ Latest News from Stem Cell Research
- ✦✦ Congresses and Events
- ✦✦ Future Prospects



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Product Overview

We are the first tissue bank worldwide to obtain stem cells from the skin, assess their quality and preserve them. If the necessity arises, these own stem cells may be accessed at any time and you may profit from the progress in medicine.



Back-up Your Life!

Store your own stem cells today for tomorrow!
By your decision you will be amongst those who
are already open to all future medical options.

MÉTHODE CELLJEUNESSE™

We have revolutionized the manufacturing of creams. Instead of synthetic polypeptides that are therefore foreign to the body, for the first time, the body's own polypeptides are used. This is made possible by a painless blood withdrawal then built into an optimal basis for a cream following a special and intricate separation and concentration procedure in our laboratory. Our technology of biological micro particles specifically developed for this purpose is applied here. These natural carrier substances allow the Celljeunesse factors to penetrate the skin even better.

MÉTHODE

CELLJEUNESSE™

*Haute Couture
for your skin*



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News

Homepage

Since the beginning of September 2011 our well-known homepage is gleaming with new splendour. Just visit us at www.ticeba.com. Discover the world of stem cells once again and explore our new online presence!

Facebook

We also have dived into the Social Media Network and are presenting our company at Facebook. Just visit our official Facebook site and click “Like”! Increase our degree of popularity!



Innovations at TICEBA

Heidelberg, 29th July 2011 – The Life-Science company TICEBA GmbH is filing an application for the expansion of the manufacturing license within the meaning of sections 20 b and 20 c of the German Medicines Act for the enhancement and filtration of mesenchymal pluripotent stem cells from the autologous primary cell culture as one of the first companies in Europe.

TICEBA is the first private tissue bank to offer to its clients the personal and individual storage of skin tissue and the stem cells contained therein with its service „Back-up Your Life!“– as unique healthcare measure with cash value on the highest level and complying with the latest status of development in science and technology.

New in our Team

We have once again been able to gain two highly qualified and motivated new colleagues as reinforcement of our team:

Anja Boye, M. A. in business studies and B.BUS in event management has been responsible for our Marketing since April 2011.

Daniela Keller, MTA-L, was cordially welcomed at TICEBA a few weeks ago and is from now on supporting our laboratory team.

Latest News from Stem Cell Research

Identification of human ABCB5⁺ dermal progenitor cells with multipotent differentiation plasticity

S Kim,¹ B Meier,² T Schatton,¹ B Wilson,^{3,1} Q Zhan,³ YH Loh,¹ GQ Daley,¹ MH Sayegh,^{3,1} Y Ziouta,⁴ C Ganss,⁴ K Scharffetter-Kochanek,² GF Murphy,³ MH Frank^{1,3} and NY Frank^{5,3,1}

1 Children's Hospital Boston, Boston, MA, 2 University of Ulm, Ulm, Germany, 3 Brigham and Women's Hospital, Boston, MA, 4 TiCeBa GmbH, Heidelberg, Germany and 5 VA Boston Healthcare System, Boston, MA

Skin stem cells possess promising therapeutic potential. Here we report identification of a novel skin-associated cell population based on expression of the ATP-binding cassette transporter, ABCB5, which is found in and can be isolated from the dermis of healthy humans or human patients. ABCB5⁺ skin cells reside in the reticular dermis, can co-express the stem cell marker CD133, and are distinct from CD31⁺ stromal cells and CD34⁺ dermal cells. Comparative analysis of early developmental and lineage-specific gene expression patterns demonstrated ABCB5⁺ dermal cells to be distinct from mature human fibroblasts, and to exhibit the more primitive molecular phenotype of human fibroblast-derived induced pluripotent stem (iPS) cells, and of human embryonic stem (ES) cells, with respect to down-regulated expression of vascular endothelial differentiation markers. In differentiation assays, purified ABCB5⁺ dermal cells were capable of giving rise to all three embryonic lineages (ectodermal, mesodermal and endodermal) *in vitro*. Moreover, in a human to mouse skeletal muscle injury xenotransplantation model, human ABCB5⁺ dermal cells possessed the capacity to differentiate into human spectrin- and delta-sarcoglycan-positive skeletal myofibers and to contribute to skeletal muscle regeneration *in vivo*. Interestingly, while ABCB5⁺ dermal cells could be consistently detected in the skin of healthy humans of all ages, a significant decline in ABCB5⁺ cell frequency was observed in older individuals. Thus, ABCB5 expression defines a novel dermal progenitor cell population in human skin that possesses multipotent differentiation plasticity. These results suggest a physiological role of ABCB5⁺ progenitor cells in tissue repair and regeneration. Moreover, they point to potential therapeutic utility of purified ABCB5⁺ dermal cells in regenerative medicine.

Due to our extraordinary network of researchers we have taken a part in the publication in diverse scientific papers also in this year. Among others, Dr Ganss and Dr Ziouta have taken a part in the following papers.

Progressive Decrease in Number and Change in Niche Preference of the ABCB5⁺ Mesenchymal Stem Cell Subset in the Skin during Aging

B. Meier¹, Y. Ziouta², A. Basu¹, A. Sindrilaru¹, H. Hainzl¹, P. Maity¹, M. Wlaschek¹, Ch. Ganss², M. F. Frank³ and K. Scharffetter-Kochanek²

¹ Dep. Dermatol. Univ. Ulm, ² TICEBA GmbH, Heidelberg, ³ Transplant. Research Center, Children's Hospital Boston and Brigham and Women's Hospital, Harvard Medical School, Boston, USA

Recently, the expression of ABCB5⁺, a novel p-glycoprotein of the ABC superfamily of active transporters, was found in a newly defined mesenchymal stem cell subpopulation in the skin. Even though its decrease in number and/or function may result in impaired regenerative capacity and aging, robust in vivo data are currently not available. We here studied the cell surface expression pattern, the cell number and the specific localization of ABCB5⁺ positive mesenchymal stem cells in human skin in young (0-20 years), middle aged (21-70 years) and old healthy individuals (> 71 years). Dermal ABCB5⁺ cells did not express the hematopoietic progenitor cell antigen CD34 nor CD133 which constitute another stem cell subset in human skin. By contrast ABCB5⁺ positive cells expressed a panel of previously established mesenchymal stem cell markers (CD29, CD90, CD59, CD44), revealed plastic adherence and were able to undergo chondrogenic, adipogenic and osteogenic differentiation. The specificity of the anti-ABCB5⁺ mAb was confirmed using a competitive 16-mer peptide. Notably, a significant decline of the percentage of ABCB5⁺ cells was found in the old age group compared to the younger age groups ($p < 0.0001$), while the total number of resident cells in the dermis per high power field remained identical in all age groups. In a first attempt to understand the mechanisms underlying the ABCB5⁺ stem cell decline in old individuals, we studied the expression of γ H2AX, a phosphorylated histone protein which detects DNA double strand breaks and initiates a DNA damage response with the induction of cell cycle inhibitors like p16. Preliminary data indicate that by contrast to age-dependent increase in γ H2AX and p16 in dermal fibroblast, no consistent age-dependent increase in γ H2AX and p16 was found in ABCB5⁺ mesenchymal stem cells. Interestingly, ABCB5⁺ mesenchymal stem cells were found in close association of CD31⁺ vessels in younger individuals, while this perivascular localisation was lost in the old age group. Collectively, a robust decrease in ABCB5⁺ positive mesenchymal stem cell with changes in niche preference may contribute to a reduced regenerative capacity in skin aging.

Congresses and Events

TICEBA at Congresses

BCAARM – 3. International Bangkok Congress on Anti-Aging & Regenerative Medicine
02 – 04 September 2011, Bangkok, Thailand

ISDS – 32. Annual Meeting of the International Society for Dermatologic Surgery
22 – 24 September 2011, Heidelberg, Germany

Congreso COLCOME

22 – 24 September 2011, Cartagena, Colombia

EMAA – 7. European Masters in Aesthetic & Anti-Aging Medicine
30 September – 01 October 2011, Paris, France

45. Medizinische Woche

28 October – 02 November 2011, Baden-Baden, Germany

Visit us at our booth! We will be glad to see you again!

TICEBA Events

TICEBA Update Workshop

19 October 2011, Heidelberg, Germany

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Future Prospects

In our next TICEBA NEWSLETTER on 6 December 2011 you will receive additional information regarding our planned product film about Back-up Your Life! as well as with regard to the expansion of our premises in Heidelberg.

YOU WANT TO KNOW MORE ABOUT TICEBA AND OUR PRODUCTS? JUST ORDER ADDITIONAL INFORMATION MATERIAL VIA E-MAIL (anja.boyce@ticeba.com). OR FILL IN THE FOLLOWING FORM AND SEND IT TO US VIA MAIL. WE ARE LOOKING FORWARD TO HEARING FROM YOU!



Please send further information material about:

- | | |
|---|--|
| <input type="checkbox"/> Back-up Your Life! | <input type="checkbox"/> Méthode Celljeunesse™ |
| <input type="checkbox"/> Scientific papers | <input type="checkbox"/> Newspaper articles |

To:

surname, given name

street, number

post code, town, country

e-mail