

CHAC technology
CELLBOOSTER®
GLOW



HUMAN SKIN EXPLANTS STUDY

Anti-Aging and Depigmentation Effect of a Hyaluronic Acid Mechanically Stabilized Complex on Human Skin Explants

Gabriel Siquier-Dameto, Sylvie Boisnic, Pere Boadas-Vaello and Enrique Verdú

Polymers 2023, 15, 2438. <https://doi.org/10.3390/polym15112438>

CHAC technology
CELLBOOSTER®
GLOW

HUMAN SKIN EXPLANTS STUDY

Independent study conducted by GREDECO Laboratory (France), led Dr. Sylvie Boisnic to demonstrate the **depigmenting** and **anti-aging efficacy** of CELLBOOSTER® Glow injected into the dermis of human skin maintained in survival.

COMPOSITION:

Stabilized
HYALURONIC ACID 18mg

VITAMINS

- Sodium Ascorbyl Phosphate (C)
- Biotin



AMINO-ACIDS

- Cysteine
- Glutathione
- Glycine
- Lysine
- Proline
- Valine

STABILIZED REVITALIZING COMPLEX

METHODOLOGY:

In the present study, skin samples from four female donors between 29 and 57 years of age have been used.

The **depigmenting effect** was analyzed on native skin after 12 days.

For this purpose, CELLBOOSTER® Glow injections were performed at D0 in the superficial dermis and the upper part of the middle dermis.

The 2 following conditions were compared in duplicate for each donor: control skin *versus* CELLBOOSTER® Glow.

The **anti-ageing effect** of the products was analyzed in a UV ageing model.

For this purpose, an oxidative stress with UVA and UVB doses was carried out at D0.

After UV session, CELLBOOSTER® Glow injections were performed in the superficial dermis and the upper part of the middle dermis.

For anti-aging effect, 2 series of culture were made at D4 (MMP1 analysis, GAGs assay) and D12 (procollagen and elastin).

The 3 following conditions were compared in duplicate for each donor: control skin *versus* UV *versus* UV + CELLBOOSTER® Glow.

CONCLUSION:

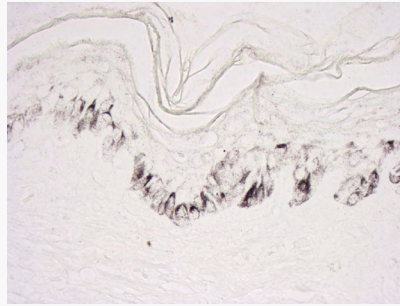
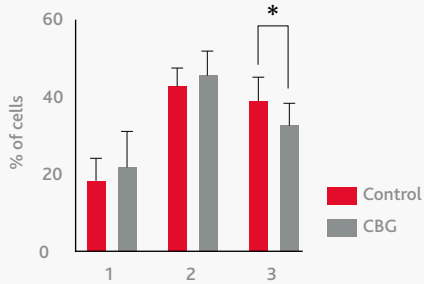
In an experimental aging model by ultraviolet (UV) on human skin maintained in survival condition, an anti-ageing effect was obtained after injection of CELLBOOSTER® Glow with an increase of **47.9% pro-collagen type I**, **25.3% elastin** and **22.4% sulfated Glycosaminoglycannes (GAGs)**.

Depigmenting effect of CELLBOOSTER® Glow was also shown with a significant decrease of cell number with important pigmentation.

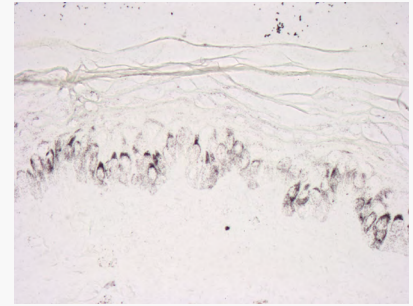
Fontana staining x 400

Histogram of the percentage of cells with low (score 1), medium (score 2) and high (score 3) melanin content in both experimental groups (Control, CBG). Values are mean \pm standard deviation (n = 8 values). * p < 0.05 compared to the control group.

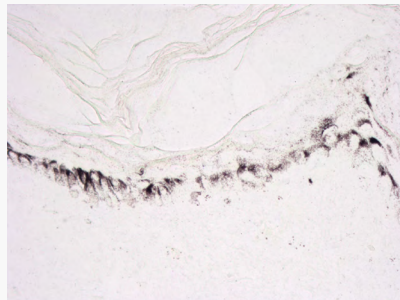
Melanic pigment (Fontana Masson staining)



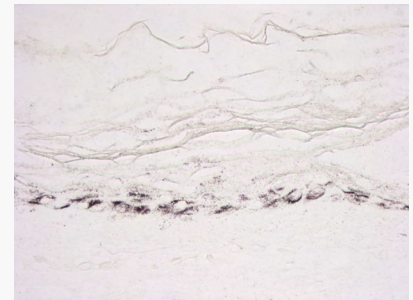
Control skin 1



Skin 1 after injection with CELLBOOSTER® Glow

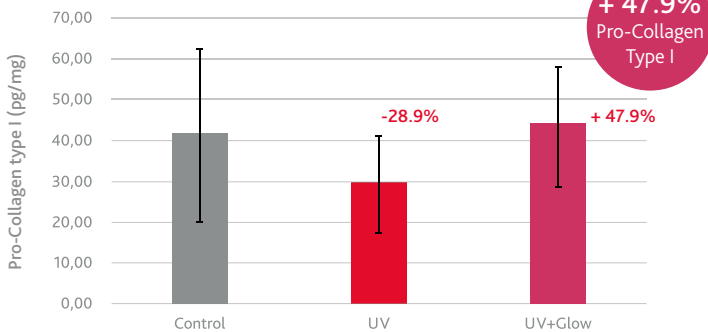


Control skin 2



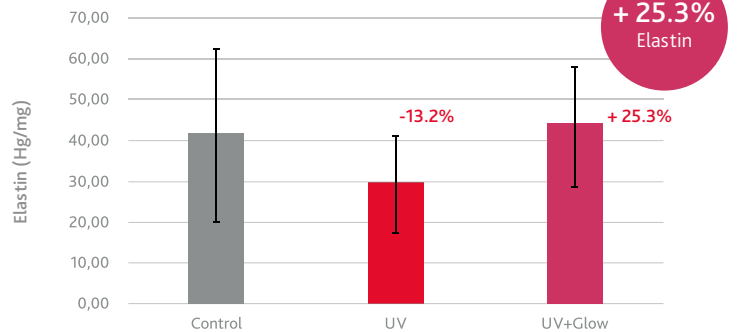
Skin 2 after injection with CELLBOOSTER® Glow

Pro-collagen type I assay



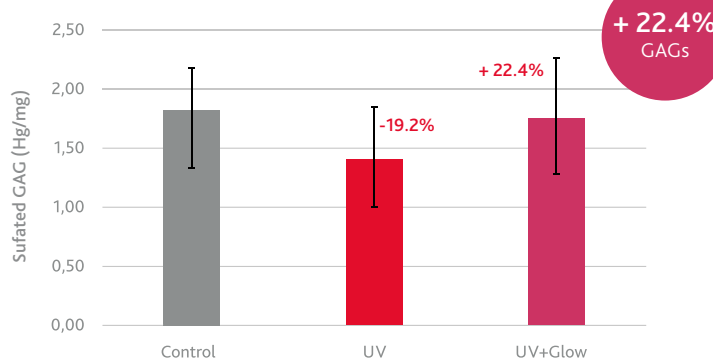
After injection of CELLBOOSTER® Glow, a significant increase of pro-collagen type I by 47.9% was obtained in comparison with UV condition.

Elastin assay



The elastin synthesis is significantly increased by 25.3% after injection of CELLBOOSTER® Glow in comparison with UV condition.

Sulfated | glycosaminoglycans assay



After injection of CELLBOOSTER® Glow, a significant increase of sulfated glycosaminoglycans by 22.4% was obtained in comparison with UV condition.

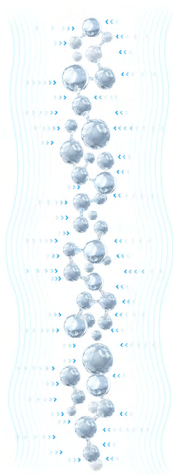
CHAC technology
CELLBOOSTER®
GLOW

CHAC TECHNOLOGY

CHAC Technology modifies and exploits the natural properties of Hyaluronic Acid (HA) making it an **optimal vehicle** for transporting essential nutrients to the skin, ensuring their **effective delivery** and **long-lasting results**.

This proprietary technology makes it possible to integrate biologically active ingredients onto HA macromolecules under conditions of mechano-stimulated reactions - **simultaneous pressure** and **shear deformation**. Specific bioactive components such as vitamins, and amino acids are **simultaneously integrated** and **uniformly distributed** onto the HA macro chains, **forming a large complex** that in essence represents a **unique macromolecular 'depot'** of biologically active material. As a result, multiple molecular complexes are formed.

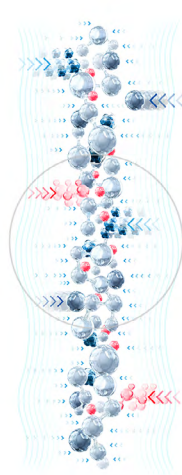
These **molecular complexes** are based on supramolecular interaction between bioactive components and functional groups of HA, and unlike bioactive components **cannot be recognized by hyaluronidase**.



STEP 1

FORMING OF A HA MATRIX:

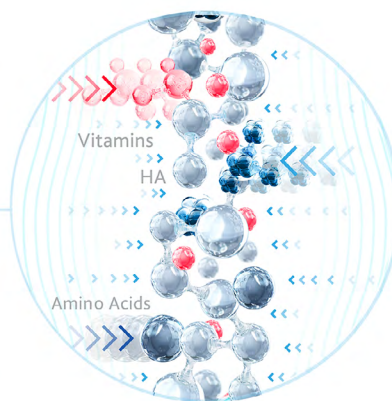
High pressure and shear deformation ensures unfolding of the molecules of HA.



STEP 2

FORMING OF LINKED COMPLEX:

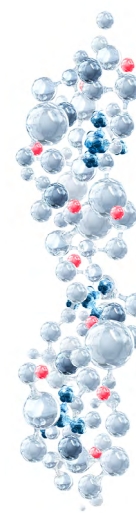
Integration of active components into the structure of the HA "matrix" under the influence of pressure and shear deformation with **the formation of links** between HA molecules and active components (amino acids and vitamins).



STEP 3

FORMING THREE-DIMENSIONAL STRUCTURAL CHAC-COMPLEX:

The pressure on molecules reduces resulting in "unfolding" of the HA molecules with **integrated active components**.



CHAC technology
CELLBOOSTER®
GLOW

Discover the full scientific article published in the renowned Polymers Journal:
Anti-Aging and Depigmentation Effect of a Hyaluronic Acid Mechanically Stabilized Complex on Human Skin Explants by Gabriel Siquier-Dameto, Sylvie Boisnic, Pere Boadas-Vaello and Enrique Verdú.

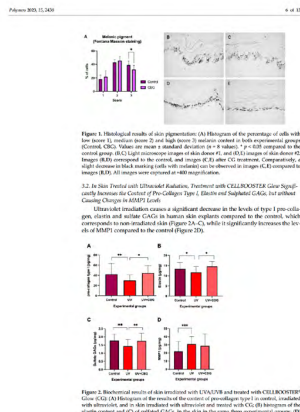


New Article

Anti-Aging and Depigmentation Effect of a Hyaluronic Acid Mechanically Stabilized Complex on Human Skin Explants

polymers 

Article
Anti-Aging and Depigmentation Effect of a Hyaluronic Acid Mechanically Stabilized Complex on Human Skin Explants
 Gabriel Siquier-Dameto ^{1,†}, Sylvie Boisnic ^{1,†}, Pere Boadas-Vaello ^{1,†} and Enrique Verdú ^{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000}



Scan to read the full article:



suisselle

beauty ■ science ■ innovation



Rue Galilée 6 | 1400 Yverdon-les-Bains | Switzerland

www.suisselle.com | info@suisselle.com

 Suisselle Global

 @suisselle.pro