

Changes in GHK and GHK-CU in blood produced by the LifeWave X39 Patch

Caitlin A. Connor, MAcOM, DAOM
Adjunct Professor, Arizona School of Acupuncture and Oriental Medicine

Melinda H. Connor, D.D., Ph.D., AMP, FAM
Research Professor, Arizona School of Acupuncture and Oriental Medicine

David Yue, Ph.D.
Director, Axis Pharm

Susan Wagner, DAOM, LAc, BCIM
Professor, Arizona School of Acupuncture and Oriental Medicine

Jens Eickhoff, Ph.D.
Senior Scientist, Statistics, University of Wisconsin Madison

Chiu-An Chang, D.O., LAc
Academic Dean, Arizona School of Acupuncture and Oriental Medicine

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Corresponding Author:

Melinda H. Connor, D.D., Ph.D., AMP, FAM
31907 South Davis Ranch Rd
Marana, AZ 85658
melinda_connor@mindspring.com
(520)609-1765

Abstract

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Connor, C., Connor, M., Yue, D., Wagner, S., Eickhoff, J., Chang, J.**

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Introduction

This study explores the impact of wearing the Lifewave X39 patch over the period of one week on levels of GHK and GHK-CU levels in the blood as a result. Blood samples were taken at baseline, 24 hours and at 7 days of wearing the patch. A sample of convenience of 10 subjects made up of both men and women aged 40-81 were selected to participate in this study.

Background

The Lifewave X39 patch uses phototherapy to stimulates a rebalancing of the body. Based on both observation and data from other studies, it was felt that a possible change in the both the tripeptide GHK and the copper tripeptide GHK- Cu might be a factor in the effects produced by the patch. The tripeptide has been demonstrated to improve tissue remodeling. “It increases keratinocyte proliferation and normal collagen synthesis, improves skin thickness, skin elasticity and firmness, improves wrinkles, photodamage and uneven pigmentation, improves skin clarity, and tightens protective barrier proteins.” (DeHaven, C., 2014) Research has identified that the peptide is used to signal the beginning of the natural repair process.

The Tripeptide

“Copper tripeptide-1(GHK-Cu) is a small protein composed of the three amino acids (protein building blocks) glycine, histidine, and lysine combined in a specific

geometric configuration with the physiologically beneficial mineral (copper)” (DeHaven, C., 2014). This tripeptide was first isolated from human plasma albumin in 1973 by Dr. Loren Pickart. Additional research has established the strong affinity the GHK peptide has for copper, and exists in two forms, as this was not covered in the initial experiment. These two forms are GHK and GHK-Cu. It is also important to mention that none of the research around GHK has ever found it to cause an issue. (DeHaven, C., 2014)

Non-transdermal Patch

All X39 patches are sealed so that none of the substances in the patch actually penetrate the skin. This allows for consistent patch promotion of the light flow throughout the time the patch is worn. Patches are calibrated to support the flow of infrared, near infrared, and visible light frequencies in addition to ultraviolet light. Using the same adhesives as band-aids, this limits the level of irritation which might be developed through consistent daily use of the patch.

Phototherapy

Phototherapy in various forms have been used for over 100 years. In that time there has been little evidence of negative side effects. There is a theoretical concern about an increase in cancer rates, but “there was no significant association found with basal cell carcinoma, squamous cell carcinoma or melanoma.” (Kakimoto, C., 2017) This suggests that this is a relatively untapped option for healing with relatively few risks.

Meridian Implications and Patch placement

The Lifewave patches are placed on specific meridian points to maximize effectiveness. The theory of balancing the body based on the Chinese meridian system is over 3000 years old. Current information now maps the meridian system to parts of the

lymphatic system. The concept of the release of “Qi” on an area of the lymphatic system is consistent with the evidence that the body has a variety of electrical-dermal potentials across its surface (Becker & Selden, 1985, Flick, 2004) and that acupuncture points are (at least in part) strategic conductors of electromagnetic signals (Feinstein, 2010).

There are two options for patch placement which have been defined for the X39 patch. The first is a point on the back, also known as GV14, Du-14, or Tao Dao. It is a meeting point of the Governing vessel with all of the Yang meridians. This means that point would have a "direct impact on the Yang meridians of the body" (Deadman, P., 2001), and both generally Qi and Yang in the body.

The second is a point on the lower abdomen, also known as CV-6, Ren 6, or Qi Hai. This point fosters Original Qi (Deadman, P., 2001). Between these two points most, if not all, of the previously noted impacts in studies of the X39 patch are supported.

Purpose

This study focused on the impact of patch usage on GHK and GHK-CU levels in the blood, with data taken at baseline, 24 hours and 7 days of patch placement. Half the participants used the CV6 point and half using the GV14 point.

Procedure

Once human research studies ethics board approval was received (NFFEH *****) recruitment was begun. Flyers advertising for interested research participants were posted at various local sites. Participants would call into the main study phone number and were assessed for inclusion and exclusion criterion. If appropriate they were scheduled for consenting. At the time of arrival at the study site, each participant was consented.

Individual participants were then taken into the exam room and a blood sample

was taken using BD Vacutainer Safety Loc Blood Collection set with Pre-attached holder sized 21GX0.75 or 23GX0.75 and placed in lavender top tubes. Each blood sample was then placed in the centrifuge, spun for 10 minutes to separate the plasma, which was then placed in the cryo tubes, and then flash frozen using dry ice. Samples were then placed in 2" thick polystyrene containers, wrapped in thermal box liners and placed in double walled boxed for overnight shipping. Samples were sent to Axis Pharm's lab in San Diego, CA.

Analysis of Blood Samples

*****Dr. Yue please write this section of the paper.

Statistical Analysis

*****Dr. Eickhoff please write this section of the paper

Results

A sample of convenience of individuals consisted of 10 individuals. There were four men and six women in the study which had a mean age of 64.2. Significant results of the Lifewave X39 patch testing are as follows:

Table 1: Absolute changes from R1 (baseline) to R2 and R3

		N	Mean (SD)	Median (Range)	p-value
GCH concentration (ng/ml)	R2	10	9.5 (9.0)	6.9 (-3.4-27.5)	0.0098
GHC-CU concentration (ng/ml)	R3	10	4.2 (4.3)	4.0 (-2.6-11.5)	0.0137

The blood analysis of GHK showed an increase at levels at a value of $p < 0.0098$ within 24 hours and GHK-CU also showed an increase at $p < 0.01$ within 7 days.

Discussion

It is important to recognize that this was both a sample of convenience with a small sample size and a pilot study. However, there was a significant change in the levels of both GHK at 24 hours and GHK-CU in 7 days. This implies promotion of positive benefits to the body. Further study will need to be done with larger sample sizes to determine if there is a consistency of results over repeated trials.

Conclusion

This study explored the changes in amounts of GHK and GHK-CU present in the blood as a result of wearing the Lifewave X39 patch for 1 week. There was a significant increase in GHK in the blood which was seen at 24 hours, at the level of $p < 0.0098$. A significant increase in GHK-CU in the blood was also seen at 7 days at the level of $p < 0.0137$.

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