Univestin®

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Univestin® is a patented, natural joint-care ingredient, researched to support joint comfort, enhance flexibility and support mobility within 3-7 days. Univestin® contains proprietary bioflavonoids derived from two well-known plant extracts with a long history of safe human consumption.

PRODUCT PROFILE SHEET

What makes Univestin® Unique?

Univestin® is a patented plant-based concept, derived from roots of *Scutellaria baicalensis* and heartwood of *Acacia catechu*, and standardised to two distinct types of bioflavonoids (catechins and baicalins), researched for its capacity to alleviate joint discomfort and stiffness. Alone or in combination with other joint care ingredients, Univestin® may provide **fast-acting joint relief support.**

The botanical combination's multi-pronged mechanism of action (MOA) modulates multiple reactions at once. As a result, end consumers may experience flexibility and mobility more quickly.

A Technological Smart Start

Univestin®'s unique formulation was developed through Unigen's proprietary **PhytoLogix® technology platform**. This proprietary informatics database contains comprehensive botanical profiles on over 12,000 plants and data on more than 300,000 HTP fractions.

Over 1230 medicinal plants from Unigen's PhytoLogix® technology platform were screened to identify natural substances with COX and LOX dual inhibitory activity. The Univestin® bioflavonoids, baicalin from ***Scutellaria baicalensis*** and catechins from ***Acacia catechu*** (***Senegalia catechu***), were identified as the active components of the most effective extracts tested both in vitro and in vivo.

About the Botanical Extracts

- Scutellaria baicalensis is one of the top 20 herbs used in Traditional Chinese Medicine (TCM). The root contains the Free-B-ring flavonoid baicalin, a compound known for its benefits as a potent free-radical scavenging.
- Acacia catechu is a plant with a long history of use in both traditional and Ayurvedic medicine. The bark contains catechin, a powerful antioxidant known to support of the body's natural inflammatory response.

Product Advantages
✔ **Scientifically studied plant-based combination**
✔ **+12 Scientific studies** Including human clinical trials
✔ **Fast-Acting (3-7 days) results on joint discomfort** Demonstrated by clinical studies
✔ **Lasting Comfort** Demonstrated on clinical trials
✔ **Long-Term safety** Extensive in vivo and in vitro safety testing and long history of safe human use
✔ **Actives selected from over 1230 medicinal plants** From Unigen's PhytoLogix® Technology Platform
✔ **Small dosage size (250mg/day)** For great joint benefits, backed by science
✔ **Water Extraction** 100% Plant-Based
✔ **4 years shelf life**

Research

Pre-clinical data

Extensive pre-clinical data has shown the beneficial effects of Univestin® related to alleviate joint discomfort:

1. Dual COX and LOX inhibition:[1,2]

- Inhibits pro-inflammatory COX-1 and COX-2 enzymes.
  - IC50 for COX-1: **0.2 µg/mL/unit**
  - IC50 for COX-2: **0.4 µg/mL/unit**
- Inhibits LOX pathway (IC50: **25 µg/mL** in LPS-stimulated THP-1 cells).

2. Strong antioxidant activity:[3]

- **ORAC value is 70,930 µM TE/g that is 36x higher** than Citrus Bioflavonoids.
- Reduces reactive oxygen species (ROS), which contribute to cartilage degradation.

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3. Regulate Gene Expression and Anti-inflammatory Activity[4]

- In human PBMCs, monocytic 28SC cells & RAW 264.7 cells:
  - Decreased IL-1 , IL-6, TNF- , COX-2 and NF B gene expression.

4. Effective in Preclinical in vivo models[5-7]

- **Rapid Pain & inflammation reduction** comparable to **ibuprofen** in 5 in vivo models.

Human Studies

A human clinical trial comparing Univestin® to an active control demonstrated that Univestin® **delivers joint health benefits in as few as 3 days.**[8]

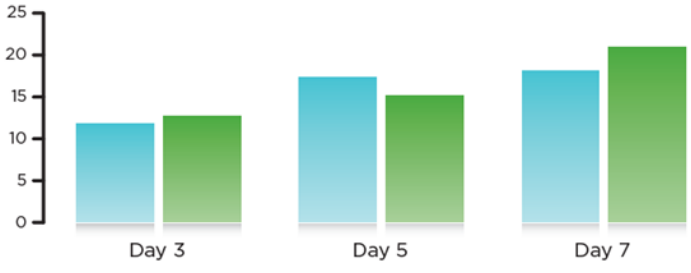
The clinical trial was a single-centred, randomized, double-blind, positive-controlled study. For this trial, a total of 80 subjects were randomized (40 per group) and were balanced by demographics, such as age, gender, and BMI.

The main objective of this study was to examine **the quick onset effects of a 1-week**, daily supplementation with Univestin® at 500 mg/day on the indicators associated with OA as compared with a positive control supplementation – a NSAID (non-steroidal anti-inflammatory drug) with a dosage of 440 mg /day.[8]

The study demonstrated that Univestin®:

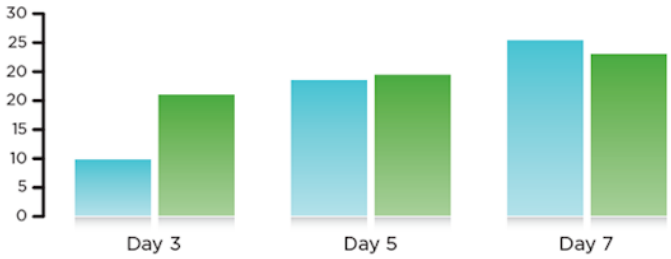
- Promotes joint flexibility **within 3 days**
- Promotes joint comfort **within 5 days**
- Supports range of motion and physical function **within 7 days**

Graphic 1
% Improvement WOMAC Joint Discomfort



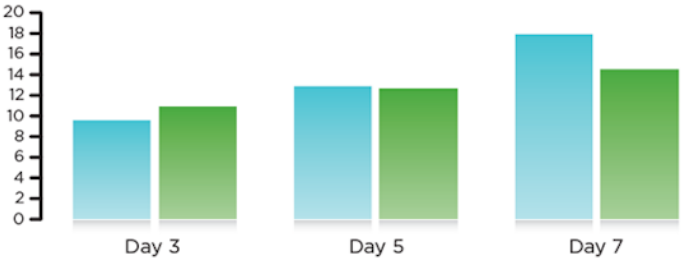
Univestin® (green) showed increased joint comfort.

Graphic 2
% Improvement WOMAC Joint Stiffness



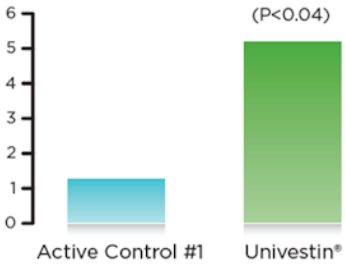
Univestin® (green) demonstrated improved flexibility scores.

Graphic 3
% Improvement WOMAC Function Score



Univestin® (green) demonstrated increased joint function.

Graphic 4
Range of Motion (% Difference Day 0 and Day 6)



Univestin® showed increased range of motion.

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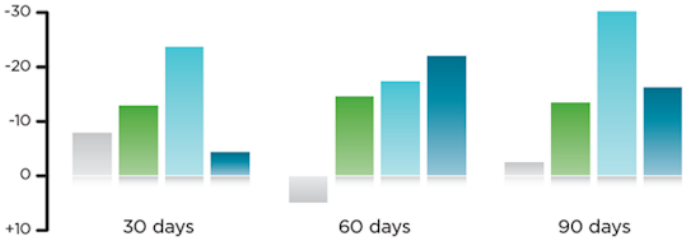
In another clinical study, Univestin® demonstrated continued efficacy and significant results in joint stiffness and function[5]. Univestin®'s continued efficacy and significant results in joint stiffness and function were clinically demonstrated in a randomized, double-blind placebo-controlled 90-day trial[9].

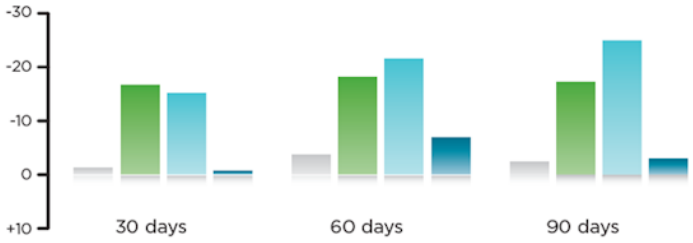
Univestin® dosages (250mg a day and 500mg a day) were compared to both a placebo and an active control (NSAID drug) through WOMAC scores **for joint comfort, flexibility and mobility. Physical function and measures in all three areas showed improvements that increased from the 30-day marker all the way to the 90-day marker.**

Graphic 5
Change in WOMAC Joint Discomfort

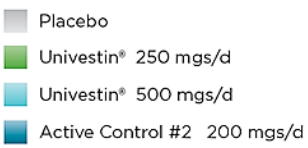


Univestin® demonstrated improved joint comfort.

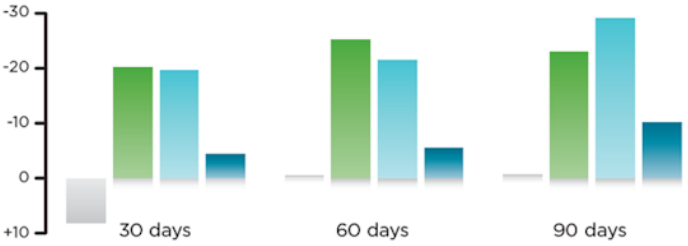
Graphic 6
Change in WOMAC Function Scores



Univestin® demonstrated improved joint function.



Graphic 7
Change in WOMAC Function Scores



Univestin® demonstrated improved joint flexibility.

Univestin® and AmLexin™ Synergy to Support Osteoarthritis

Research has been conducted to investigate the potential benefits of Univestin® and AmLexin™ for joint support (pain relief and cartilage protection), specifically as a combination treatment for Osteoarthritis (OA)[7].

Results show that when combined in a formula both ingredients work efficiently in reducing (significantly) pain sensitivity. Not only this but according to the study the combination also helped to preserve the articular cartilage matrix integrity composition and showed a statistically significant reduction in uCTX-II level (the most well-validated biomarker in osteoarthritis).

The results of this combination study and individual studies on both ingredients support that Univestin® and AmLexin™ may potentially be an alternative natural and plant-based solution for the management of OA and/or its associated symptoms, by enhancing the anti-inflammatory and analgesic action of Univestin® with the cartilage degradation support from AmLexin™.

To learn more about the synergy download here our specific presentation.

Product Safety

Acute toxicity, repeated toxicity, safety pharmacology, reproductive and developmental toxicity and genotoxicity in in vivo safety studies have demonstrated the safety of Univestin®.

Furthermore, extensive human clinical safety studies were conducted on Univestin® at multiple dose levels and different durations. Dosages from 250 mg to 1,100 mg per day were administered orally in capsules without any adverse effect reported.[10]

Univestin® has been proven to be safe for human consumption with more than 6 billion doses consumed at the recommended daily dosages.

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Product Range

Ingredient	Active Content	Grade	Mesh Size
Univestin	Min 60% Baicalin Min 10% Catechins	Powder	NLT 80% thru 80 mesh

Product Applications

Univestin® is mainly used in capsules and tablets but can also be used in liquid applications. We suggest you use flavouring (i.e berry) which will cover the slightly bitter taste when formulating liquid applications.

Product Dosage

Recommended daily dosages are 250mg-500mg/day depending on the severity and health application.

The Phytologix® Technology Platform

Univestin®'s unique formulations are discovered and developed through Unigen's proprietary Phytologix® Technology Platform.

This proprietary informatics database contains comprehensive botanical profiles on over 12,000 plants and data on more than 15,000 extracts and 300,000 HTP fractions. Unigen scientists used these profiles to identify plants whose actives delivered the most effective health benefits.

PhytoLogix®

About

UNiGEN

Unigen focus on identifying the unique bioactive natural products of medicinal botanicals and then developing them into reseach-driven, proprietary standardized extracts for use in nutraceutical, cosmetic, and pharmaceutical finished products.

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