

# VEGAN COLLAGEN

Pepwell™

Vegan Collagen

이너뷰티 효능 효과

- 항산화 기능의 엔티에이징 비건 콜라겐
- 뼈 관절 건강을 위한 비건 콜라겐
- 주름 방지 주름 개선을 위한 비건 콜라겐
- 모발건강을 위한 비건 콜라겐

Pepwell™Brand

**Vegan Collagen**

**Non-Animal Collagen**



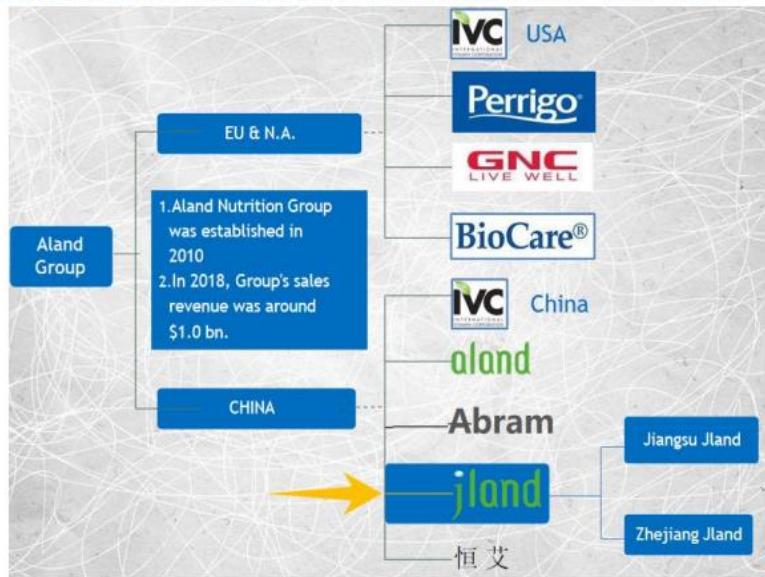
## A: Company Profile

### Jiangsu JLand Biotech Co.,Ltd



## B: Company Background

JLand is a member of the Aland Group. Aland Nutrition Group was established in 2010, In 2018, Group's sales revenue was around \$1.0 bn. Aland is the world-leading provider for nutrition and wellness with over 10 brands globally and domestically, including "aland", "alandv", "Bloem", "BioCare", etc. The Aland Group has established 10 modern manufacturing sites and 3 international R&D centers in Asia, North America and Europe.



## C: Production Advantages



Production capacity could reach 10 tons per year.

**Guarantee Sustainable, stable supply**

## D: Quality Certificate



## A: Introduction of Pepwell™ Collagen



**PEPWELL™**

### 100% Plant Vegan Collagen 특장점

- 원료유래 : 100% 효모발효(피치아파스토리스)로 생산되는 콜라겐
- 품질보장 : 모든 배치마다 일관성이 보장되는 고 순도 콜라겐
- 안전성 : Non GMO, 바이러스 감염 제로 및 알레르기 유발 제로
- 품질인증 : 글루텐 프리, 비건 인증 제품, Halal 인증 제품

## Pepwell Collagen

Amino Acid	Amino Acid Single Letter	Portion(%)
알라닌 (Alanine)	A	1.0
아스파라긴 (Asparagine)	N	12.0
글루타민 (Glutamine)	Q	16.0
글루탐산 (Glutamic acid)	E	4.0
글라이신 (Glycine)	G	33.6
라이신 (Lysine)	K	3.0
프롤린 (Proline)	P	22.4
세린 (Serine)	S	8.0

## 비교 표

### Plant Pepwell™ Collagen vs Animal(Fish) Collagen

ITEM	VEGAN COLLAGEN	ANIMAL(FISH) COLLAGEN
Main Ingredient 주 원료	Single substance with certain M.W. 동일 분자크기로 단일 성분	Mixture of Collagen with different M.W./sequence/structure 여러 분자크기 구조 혼합 성분
Appearance/Odor 성상/냄새	White, no smell 냄새없는 백색 분말	Slight Yellow / fish smell 약간의 냄새/약간 노랑색
Water Solubility 수용성	Excellent(Max.500mg/ml) 양호한 수용성	Not sure 불확실
Purity 순도	>90%(HPLC) 100%(SDS-PAGE) 90%이상의 순도(HPLC)	No Standard 기준 없음
Stability 안정도	Batch to Batch Consistent 모든Batch 일관성생산	Not Batch to Batch Consistent 일관성 생산 불가
Safety 안전성	No virus risk, No allergy/ No harmful residues 잔존 화학물질,알레르기,중금속 같은 리스크 없음	Chemical residues, BSE and Heavy metal risk possible 잔존 화학물질,알레르기,중금속 같은 리스크 있음.

## 2. Product Specification

### Pepwell™ GS70

Description	Pepwell™ GS70 is an off-white or light-yellow granular powder	
Composition	Pepwell™ Collagen	65-75%
	Resistance Dextrin	20-25%
	Sorbitol	5-10%
Stability and storage	The product is reasonably stable to air if protected from humidity and heat. The product may be stored for at least 24 months from the date of manufacture in its sealed container under normal temperatures in a dry and enclosed environment.	
Package size	1kg/bag, 10kg/bag	
Application	Inner beauty, functional food and sports nutrition products	
Recommend use level	0.30-0.35g/day/serving	
Maximum Level of use	Daily dose of 1.57g - 3.90g/kg body weight ( According to GRAS Panel)	

### 3. Safety/Regulatory - Gras- Certified

#### **GRAS Panel Statement Concerning the Generally Recognized as Safe (GRAS) Use of Collagen Produced by *Pichia pastoris* as a Food Ingredient**

07 July 2021

Pepwell™ Collagen is a purified source of collagen ( $\geq 90\%$  collagen), which has an extensive history of safe consumption in the human diet. Collagen is a common constituent of the human diet as it is naturally present in meat and meat products. Pepwell™ Collagen shares structural similarity to collagen obtained from bovine and poultry sources based on the results of FTIR and circular dichroism spectroscopy, as well as sequence homology based on in silico searches of the amino acid sequences of the protein. Furthermore, the repeating "X-Y-Gly" sequences produce a tertiary structure that is highly similar to other collagens. It is expected to share similar physico-chemical properties and to be digested in a manner similar to other dietary sources of collagen following ingestion. Therefore, the history of safe consumption of collagen can be extended to support the safety of Pepwell™ Collagen.

## THE ANTI-AGING EFFECTS AND MECHANISM OF PEPWELL™ VEGAN COLLAGEN BASED ON FIBROBLAST MODELS

### Introduction

- Some clinical study showed that collagen consumption can alleviate the Skin damage caused by aging or photoaging. And UVA exposure can cause skin photoaging ,thus damage the homeostasis of extracellular matrix(ECM), including the collagen fiber, elastin, hyaluronic acid etc; And these were secreted mainly by dermal fibroblast.
- We aim at studying the protective effect of Pepwell™ on the human skin dermal fibroblast caused by UVA ,thus provide theoretical support for its anti-aging effect.

### Methods

- Human dermal fibroblast cell(HDF) was exposed to UVA light to induce the photo-aging model. Then, stimulated the human digestion process in vitro, Pepwell™ and positive control fish collagen & bovine collagen were hydrolyzed by pepsin and trypsin.
- The change of cell viability of HDF-UVA exposure was analyzed when different concentration of Pepwell™, fish collagen and bovine collagen hydrolysate were added and cultured for 36h or 60h.

### Conclusion:

- Oral supplement PepwellTM much outperform fish collagen and bovine collagen of anti-aging, anti-wrinkle, antioxidant and collagen content boost.

# Vegan Collagen- 인증자료



Vegan certified

Non-GMO



Halal certified

Gluten-free

Allergy-free



# Recommend Formula



## Pepwell -

Ingredients	Composition(%)
Pepwell™ GS70	10~15%
Flos rosae Powder	1~2%
Litchi flavor essence	3~5%
Taste essence (sweet)	1~2%
Vitamin B rich yeast	0.1~0.2%
L-Theanine	0.5~1.5%
Rice germ powder	2.5~3.5%
Erythritol (crushed through a 40-mesh sieve)	70~85%



## Pepwell -

Ingredients	Composition(%)
Pepwell™ GS70	25~35%
Vitamin D3 powder	0.15~0.35%
Vitamin K2 powder	1~3%
Magnesium oxide	2~5%
Calcium carbonate	40~50%
Curcumin	8~13%
Crosslinked sodium carboxymethyl cellulose	0.3~0.6%
Microcrystalline cellulose	8~12%
Magnesium stearate	0.15~0.55%

# Recommend Formula



Pepwell

Ingredients	Composition(%)
Pepwell Vegan Collagen	70
Hyaluronic acid	5
Pomegranate Extract	7
Glutathione	6
Biotin	6
Peach Flavor	0.1

Patents (Registered in US, Korea, EU & China)	Patent Titles
WO2018014452A1 ZL201810048908.8 US16318549; EU16909379.6; KR1020197001822	Fermentation process with pichia yeast expressing recombinant collagen
WO2018014453A1 ZL201610587403.X US16318556; EU16909380.4; KR1020197001826	Fermentation process increasing production level of recombinant collagen
ZL201610585373.9	Fermentation medium of pichia pastoris applied to scale production of recombinant collagen

US patent : 20190309339A1 and 20190241645 A1