



Persian silk tree

**Function:**

Fights the cutaneous signs of fatigue caused by glycation and glycoxidation.

**Definition:**

Extract of *Albizia julibrissin*, the Persian silk tree.

**Properties:**

Prodizia™ promotes the visible reduction of the signs of fatigue: dark circles, under eye bags, dull complexion, drawn features by protecting and repairing the skin from the damage caused by glycation.

**Characteristics:**

Prodizia™ can both protect and repair the proteic structures damaged by glycation by supporting specific detoxifying systems (glyoxalase and proteasome). Prodizia™ is effective to maintain the cell mechanical viability, the optimal energy production, the microvascular network integrity and to limit the lipofuscin accumulation.

**Point of interest:**

Prodizia™ can rebalance the production of melatonin by glycation-tired fibroblasts.

**INCI Name:**

Pending

**Applications:**

Products designed to fight against the cutaneous signs of fatigue.

**Formulation:**

Water soluble.

Add to the formula between 25°C and 50°C.

**Recommended use level:**

3%

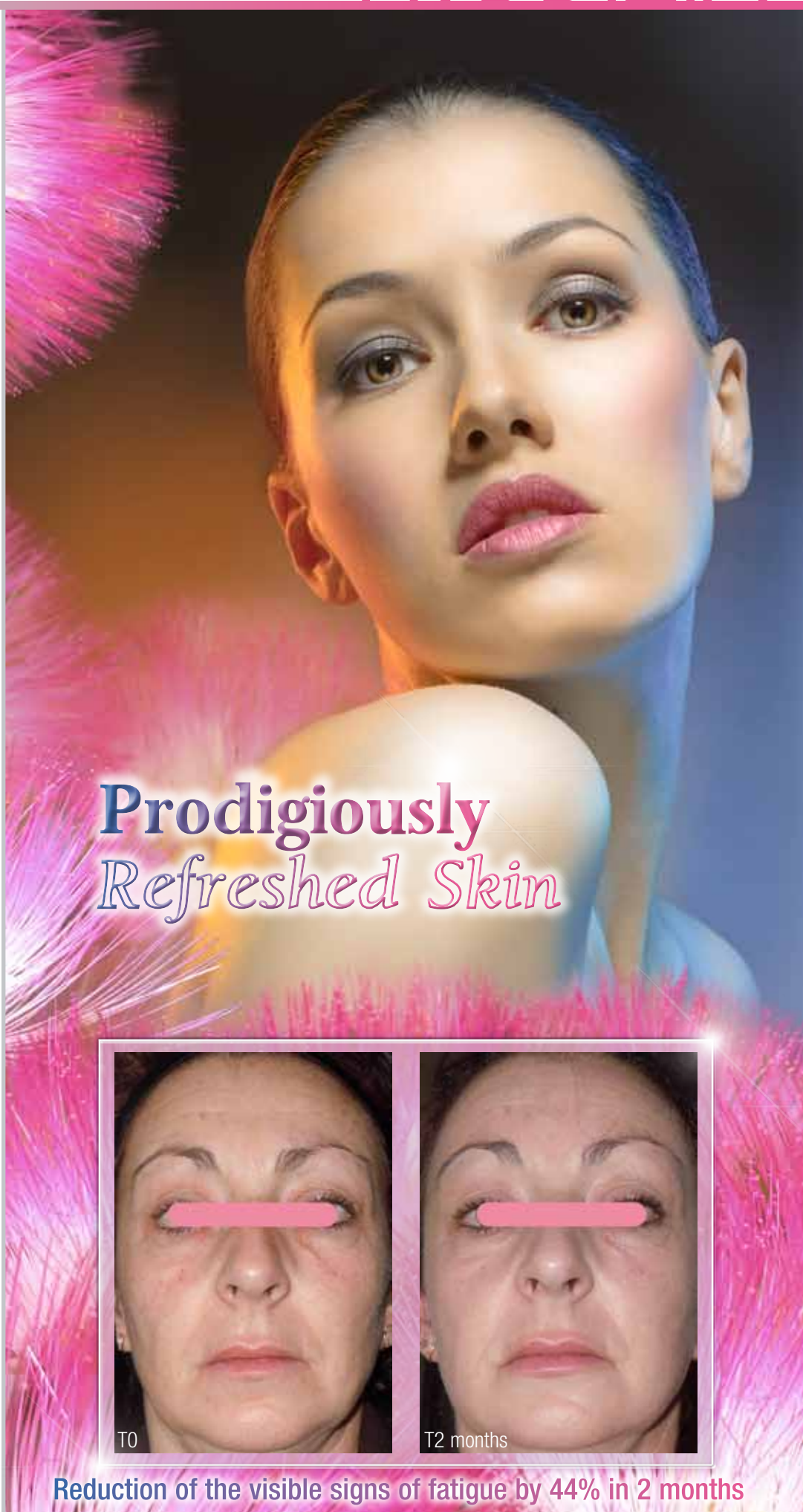
**Patent:**

Pending



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Prodigiously Refreshed Skin

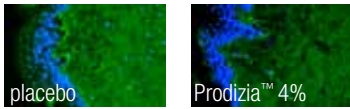


Reduction of the visible signs of fatigue by 44% in 2 months

*In vitro* tests

● **DETOXIFICATION: deglycation effect**

- Tiring stress with MGO + 0.08% Prodizia™ on human dermal fibroblasts. Advanced glycation end-products (CML)..... **-43%/stressed control**, p<0.05
- Tiring stress with MGO + 4% Prodizia™ on skin explants. Advanced glycation end-products ..... **-23.4%/placebo**, p<0.01



● **PROTECTION AND REPAIR: cell mechanical viability**

- Vimentin fibre deglycation on skin explants**  
Tiring stress with MGO + 4% Prodizia™ on skin explants
- Reparation of vimentin fibers ..... **+75%/placebo**, p<0.01
- Contractile capacity**  
Equivalent dermis including fibroblasts and collagens receive MGO or MGO + 0.08% Prodizia™ for 5 days.
- Contraction increases by ..... **68%/stressed control**, p<0.01

● **PROTECTION AND REPAIR: microvascular network**

- Glycotoxins and glycation products have a deleterious effect on the vascular network by damaging the vessel wall, stimulating angiogenesis, leading to visible facial signs of fatigue. Tiring stress with BSA-MGO + 3% Prodizia™
- Microvascular network damage ..... **-70%/stressed control**, p<0.01

● **DETOXIFYING SYSTEMS**

- Tiring stress with MGO + 0.08% Prodizia™ on human fibroblasts.
- Maintenance of the detoxifying glyoxalase ..... **+41%/stressed control**
- Tiring stress with MGO-BSA (Bovin serum albumin) + 0.08% Prodizia™ on human fibroblasts.
- Maintenance of the proteasome activity ..... **+16%/stressed control**, p<0.05

● **REBALANCE OF MELATONIN**

- Tiring stress with MGO + 0.08% Prodizia™ on human fibroblasts.
- Regulation of the melatonin production ..... **+38%/stressed control**, p<0.01

● **PROTECTION AND REPAIR: cell energy**

- Energy sensor AMPk (ensures extra production of energy when needed)**  
Tiring stress with MGO + 4% Prodizia™ on skin explants
- Reparation of AMPk ..... **+25%/placebo**, p<0.01
- Energy production**  
Simulation of rest/activity phase cycle. Fibroblast cultures with 0.08% Prodizia™ or nothing for 16 days. MGO is added at day 4 and day 13.
- ATP production ..... **+182%/stressed control**, p<0.01

● **PROTECTION AND REPAIR: cell waste**

- Lipofuscin accumulation**  
Simulation of rest/activity phase cycle. Fibroblast cultures with 0.08% Prodizia™ or nothing for 16 days. MGO is added at day 4 and day 13.
- Lipofuscin quantity ..... **-81%/stressed control**, p<0.01

*Ex vivo* test

● **DETOXIFICATION**

- 14 female volunteers with signs of fatigue, aged between 31-50 years old (mean age: 43.5). Application of a day cream containing 2% Prodizia™ and a night cream containing 4% Prodizia™ on the forearm against a placebo on the other arm for 2 months. Stripping, extraction and measurements by revelation.
- Variation of the AGEs quantity ..... **-26.8%/placebo**, p<0.05

*In vivo* tests

Application of a day cream containing 2% Prodizia™ and a night cream containing 4% Prodizia™ on the forearm against a placebo on the other arm for 2 months.

● **ADVANCED GLYCATION END-PRODUCTS - AGE-reader**

24 female volunteers with stressed skin, aged between 53-69 years old (mean age: 60).

|                             |   |                 |               |
|-----------------------------|---|-----------------|---------------|
| Variation/placebo           | <b>-8.6%</b> , up to <b>-33%</b> , p<0.05 |                 |               |
| Volunteers with improvement | <b>71%</b>                                |                 |               |
| Youth gain (1)              | <b>10 years</b>                           |                 |               |
| Glycated collagen (2)       | <b>-13.9%</b>                             | Pentosidine (2) | <b>-16.5%</b> |

Based on the publication of (1) Lutgers, 2006, (2) Meerwald, 2004

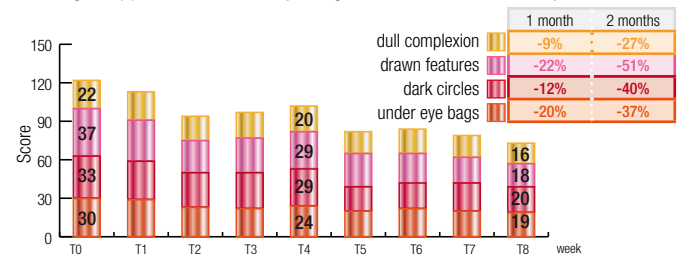
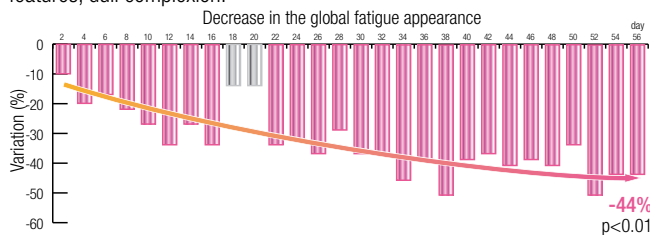
● **CUTANEOUS FATIGUE AND SLACKENING - reviscometer**

20 female volunteers with signs of cutaneous fatigue, aged between 31-50 years old (mean age: 43). The placebo has no effect.

| Variation/placebo           | Skin Fatigue   |                | Slackening      |                 |
|-----------------------------|----------------|----------------|-----------------|-----------------|
|                             | T1 month       | T2 months      | T1 month        | T2 months       |
| Variation/placebo           | <b>-26.3%*</b> | <b>-30.7%*</b> | <b>-40.2%**</b> | <b>-44.0%**</b> |
| Maximum variation           | <b>-63%</b>    | <b>-69%</b>    | <b>-65%</b>     | <b>-81%</b>     |
| Volunteers with improvement | <b>80%</b>     | <b>80%</b>     | <b>80%</b>      | <b>85%</b>      |

● **Self-evaluation**

20 female volunteers with signs of cutaneous fatigue, aged between 31-50 years old (mean age: 43). Application of a day cream containing 2% Prodizia™ and a night cream containing 4% Prodizia™ on the face for 2 months. Scoring of the global fatigue appearance, under eye bags and dark circle intensity, drawn facial features, dull complexion.



**Prodizia™ can both protect and repair the proteic structures damaged by glycation by supporting specific detoxifying systems (glyoxalase and proteasome). Prodizia™ is effective to maintain the cell mechanical viability, the optimal energy production, the microvascular network integrity and to limit the lipofuscin accumulation.**  
**Prodizia™ promotes the visible reduction of cutaneous signs of fatigue: dark circles, under eye bags, dull complexion and drawn features.**