

Products and materials proposal of oral care and for dry syndrome disease, based on the patent group

Oral care composition related patent group:

Patent No. 5747274

Patent No. 5924604

Tablet・Granule Use Patent Application No. 2015-095075

Pharmaceutical manufacturing Patent Application No. 2015-122770

Toothache stopped Tablet Patent Application No. 2015-227257

PCT Application [PCT / JP2016 / 002171](#)

Trademark Registration No. 5798100 [mouth mate](#)

Japan-mode co. ltd.

Patented the discovery of stabilization and revitalization, of lactoferrin

◎ We had been pursue long time, storeable formulation by stabilizing, activating of lactoferrin in aqueous solution.

- After long time investigation of blending various additives, we found the stabilization of lactoferrin in aqueous solution is that to add polyvalent inorganic and or organic acids salts as an additives.
- thus, we found that phosphorylated oligosaccharide calcium is the most suitable material in those.
- In addition, we also discovered that the saliva begins to spring by this combination.

◎ We discovered that promotion of stabilization and revitalization of lactoferrin, by add phosphorylated oligosaccharide calcium solution on lactoferrin each of solid, powder, granules, aqueous solution. then this patent 5747274 was acquired.

▪ This extremely high molecular “**lactoferrin**” of proteinaceous physiologically active substances **has been attracting attention now, in all medical care and the beauty care genre, because of it’s multi-functional multi-effectiveness.**

· However, the application to the aqueous formulation had been very difficult matter that to keep stability and activation in aqueous solution, it was a demanding task of all lactoferrin developers.

▪ As a solution, we found the effective composition for that is phosphorylated oligosaccharide calcium of phosphoric acid salt. Also we found secretion of saliva by this combination. Then we acquired the patent as a combination of this composition.

※ There are several example of executive stabilization by other salt materials, sodium etc. but it seems not to take advantage of the efficacy of lactoferrin, enough.

Patent and patent application the following:

Patent No. 5747274, Patent No. 5924604, Tablet・Granule Use Patent Application No. 2015-095075, Phamaceutical manufacturing Patent Application No. 2015-122770, Toothache stopped Tablet Patent Application No. 2015-227257, PCT application PCT / JP2016 / 002171



We developed food tablet “mouth mate“, on the basis of patent

We discovered the secret of saliva, by a new coupling of lactoferrin and phosphorylated oligosaccharide calcium from the variety of food materials.

After confirmation of that it has not been filed as a patent in other, then we applied for Japanese Patent Application No.2015-012085, and granted as Japanese Patent No.5747274

Then, we developed food tablet of “mouth mate“, on the basis of this patent.

Characteristics of 2 large composition of this patent has been utilized in a “mouth mate“, in addition **to secretion of saliva.**

【 Characteristics of lactoferrin 】

Infection defense function, the immunostimulatory action, anti-oxidation, anti-microbial action, anti-inflammatory, anti-allergic effect

【 Characteristics of phosphorylated oligosaccharide calcium 】

Regeneration effect to promote the remineralization of teeth, to metabolism of skin tissue, by absorbing into skin quickly by the speed of dissolution ionization.



[Patent No. 5747274] principal component two of the composition of matter patent ①

① Main component : characteristics of lactoferrin

- Lactoferrin is a valuable component which is only a small 0.2g/ 1 liter exist in milk, **but contains a lot in the amniotic fluid and breast milk. And it is deeply related to cell activity at birth and functional protein for growth.**
- Is referred as a biological defense factor protein that has infection defense function.
- **Colorful efficacy of lactoferrin has been conferred, such as anti-allergic effects, immunostimulatory action, anti-oxidation, anti-microbial action, anti-inflammatory.**
- Having pharmacological effects such as antibacterial action and the growth effect of lymphocytes.
- Lactoferrin has been reported to be effective also in care of lacrimal gland and repair of the conjunctival mucosa of dry eye.
- It has been reported in skin care field studies that lactoferrin would be applicable for care of cell activity on the skin of faded by age.
- Effect can be expected also to sensitive skin and stress skin measures.

Other reported cases in the skin care field:

- The action of lactoferrin after creating the wound by scratching in the film of skin cells, they found that skin cells is activated so as to close the wound. (announcement "international lactoferrin Society" in 2007)
- It has been proven effect for the production of hyaluronic acid, collagen, elastin, when apply lactoferrin solution to the dry skin diseases.
- Wrinkle and tension-elasticity of skin are improved by that lactoferrin binds with lactoferrin receptor on the cell, its indicating that transduce signal works for repair of skin damage.
- **While having excellent properties as described above, weakness of lactoferrin is that an easily be decomposed by proteolytic enzymes.**

[Patent No. 5747274] principal component two of the composition of matter patent ②

② Main component : Characteristics of phosphorylated oligosaccharide calcium (POs-Ca)

- Phosphorylated oligosaccharide calcium (POs-Ca) are used for food functional materials, cosmetics, a quasi-drug and variety, is monopoly material of Glico.
 - Be dissolved 70g by with 100cc small amount water, unlike ordinary calcium agent, its characteristics is its speed of immediate ionization of calcium.
 - Drawback of Calcium phosphate bond be hard in the body absorption, but in case of (POs-Ca) be quickly absorbed in the body.
 - Recent studies have demonstrated that has various functions such as mineral supplementation and oral/skin care.
 - It can be utilised for a novel active raw materials of functional cosmetics as skin barrier function improvement, skin hydration, normalizing epidermal turnover (metabolism).
 - (POs-Ca), unlike the normal calcium, so to penetrate the tooth in a state in which the calcium is dissolved in saliva, to promote the recovery of the healthy state of the initial dental caries (initial caries) is confirmed in the human oral test It is.
 - there is also a characteristic such as the following that are suitable for oral care.
- ① Calcium shows high solubility in saliva material
 - ② Not be assimilated to tooth decay bacteria (mutans streptococci)
 - ③ There are three of efficacy with respect to the initial dental caries (remineralization, re-crystallization, promoting effect of re-curing)
 - ④ There is a buffering action to prevent a reduction in plaque pH

© Phosphorylated oligosaccharide calcium has been attention considerably, for the cosmetics materials and the recycled materials of skin, because of wet efficacy for skin by quick absorption, by quick dissolution ionization.

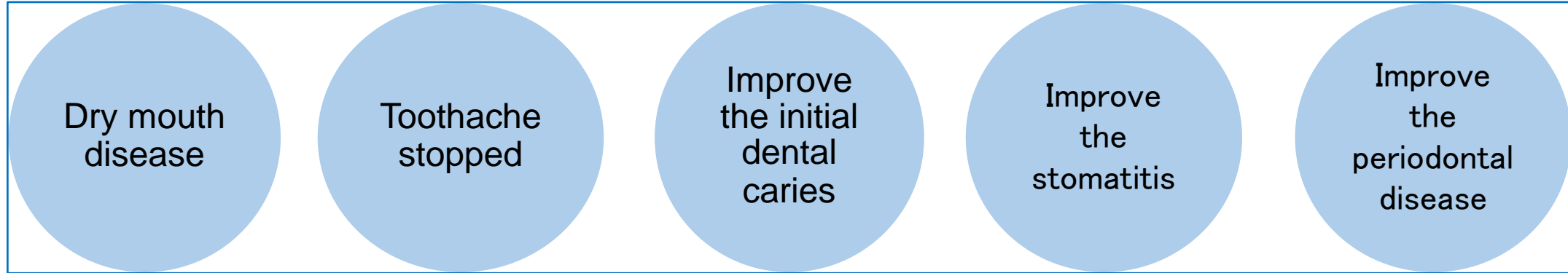
【 Synergistic effect of phosphorylated oligosaccharide calcium and lactoferrin 】

Even phosphorylated oligosaccharides calcium alone, has an excellent effect on skin/oral care. also has an excellent effect as substance that stabilizes activated lactoferrin in aqueous solution. Stabilization of lactoferrin by this, now to be greatly improved an excellent effect of lactoferrin. it has been not only the discovery of secretion of saliva, but also the discovery of high synergistic effect by the combination of those two excellent substances.

Marketability of the mouth mate

From the confirmation results of small clinical trial, There be marketable, as bellow,

1. For the dry mouth disease, secrete of saliva by food tablets.
2. For sudden toothache, antodontalgic !
3. For early tooth decay, remineralization of the tooth improvement !
(stop the pain of severe tooth decay, then re-calcification and reduces the symptoms)
4. Take the pain of mouth sores, improve the stomatitis !
5. Improve the periodontal disease by remove the plaque of that pathogenic bacteria of the gooey substance (biofilm)!



《 Intraoral all-in-one care tablet ! ! 》

Reach to the whole world of the oral care market !

- Oral care market, the total amount of the whole world are approximate about 40 trillion yen market in general.
- Mouth mate **will be Monopoly this 40 trillion yen market**
- the total medical expenses are about 40 trillion yen, the dental health care costs are about 7% (2.8 trillion yen) in japan.
- If you look at the United States as the free medical care country, about 60% are self-bankruptcy without paying the medical expenses. Also about 40% are self-bankruptcy without paying the dental health care costs, as a current situation.
- Furthermore, Asia, South Asia, India, China, there not been development of dentistry even now, it is Current status.

※ Current situation Supplement to the next section



© Mouth mate will save the oral patient of all the world !

Dentist number of the current state of the world (Supplement)

* North America *

Per 100,000 population dentist number = 60 people

Features: Pay much attention to the appearance, there is a high awareness of cosmetic dentistry and aesthetic dentistry

example)

- there are the world's highest level of sanitation state, but the treatment costs are high and about 100,000 yen per teeth (the United States)
- Health insurance can be used only for children. Adult is about 10,000 yen in the cleaning of teeth (Canada)

* South America *

Per 100,000 population dentist number = 51 people

Features: there are many Japanese dentist who received training in Japan

example)

- technology is not much different in Japan and level have relatively advanced (Brazil)
- General Hospital for a small number, and crowded, is not hygienic. (Jamaica)

* Europ *

Per 100,000 population dentist number = 62 people

Features: Although there is a difference depending on the country, not much of a problem because there is a flight of traffic.

example)

- Because the dentist is insufficient, if it is not their own expense, to wait more than six months (United Kingdom)
- Medical standards is a top-class, free all nor treatment correction is up to 19 years old! (Sweden)

*Africa *

Per 100,000 population dentist number = 4 people

Features: insufficient dentist, equipment, hygiene all.

HIV due to blood transfusion, the risk of infections such as malaria, hepatitis.

* Oceania *

Per 100,000 population dentist number = 23 people

Features: other than Australia and New Zealand dental practice is not sufficient country.

example)

- Range of health insurance is limited, about 30,000 yen to put a crown (Australia)
- There are very much tooth decay in order to prefer a strong sweet taste, but treatment is difficult because of island are too much. (Tonga)

* asia *

Per 100,000 population dentist number = 27 people

Features: The gap between the rich and the poor is large, there are many countries where only part of the wealthy are received a dental practice.

example)

- Sanitary condition is not good, but the cost is high. But, be down by negotiation (Philippines)
- Turn use syringe several times, in rural areas and low-income earners. (China)

* japan *

Per 100,000 population dentist number = 73 people

Next, reach to the whole world market of the dry eye disease, in the solution of dry skin disease !

- Dry eye disease: Actualized patient 8 million people in Japan
- Dry skin disease: Actualized patient 8 million people in Japan
- Dry mouth disease: Actualized patient 8 million people in Japan

※ Above are called Sjogren's patient and they are common patient.

- After the **dry eye disease correspondence** of eye drops is completed, The world market is tens of trillions of yen!
- After the solution of **dry skin disease correspondence** is completed, The world market is tens of trillions of yen!

Reach to the dry eye disease, in the solution of dry skin disease

【 Powder spray for dry skin disease 】

Phosphorylated oligosaccharide calcium be quickly absorbed in the body.

Phosphorylated oligosaccharide calcium has been attention considerably, for the cosmetics materials and the recycled materials of skin, because of wet efficacy for skin by quick absorption, by quick dissolution ionization.

This powder spray has excellent healing effects of acne and pimples, repair action of wound. In addition, moisturizing force height, high speed of metabolism, excels in height of deodorant force.



【 The development of dry eye disease for eye drops 】

Also considerable attention for that the tears gush in saliva and similar mechanism. Human clinical trials of dry eye disease also performed, even in dry eye, the present patent composition we've found that highly effective.

✂Attached photo (image)

▪ The development of the lotion for dry skin for moisturizing, at middle of the development. (dry skin correspondence)

▪ In the future, eye drops for dry eye to the development in partnership with drug maker (dry syndrome disease correspondence)



Proposal of patent raw materials package For dry eye disease and dry skin disease market of the world

Raw material supply and OEM production for functional food, drink, cosmetics, of patent composition.

Packing of patent composition raw material supply (it will be white powder of aluminum pack 10kg)

those products, food, functional food, cosmetics, of patent composition, you can view all the following patent group list.

• Patent number that can be displayed: [Patent No. 5747274](#), [Patent No. 5924604](#), Tablet • Granule Use Patent Application [No. 2015-095075](#), Pharmaceutical manufacturing Patent Application [No. 2015-122770](#), Toothache stopped Tablet Patent Application [No. 2015-227257](#) PCT application [PCT / JP2016 / 002171](#)

★ Patent composition material type A: (white powder 10Kg 10 bags ~)

16% lactoferrin, 80% phosphorylated oligosaccharide calcium, the other 4% (mixed powder)
(Tablets, granules, and the powder raw material for functional foods : 5 -20% content)

★ Patent composition material type B: (white powder 10Kg 10 bags ~) Tablet, granule, powder, mixed material in each will vary.

4% Lactoferrin, 20% phosphorylated oligosaccharide calcium, the other 76% mixed materials, vitamins, minerals, can also be added in any material if the lactic acid bacteria such as powder. (However, special material, please contact us.)

(Please processed into tablets and tablet as it is. In addition powder, stick, please fill as it is)

★ Patent composition material type C: (Cosmetic Ingredients) (white powder 10Kg 10 bags ~)

8% lactoferrin, 80% phosphorylated oligosaccharide calcium, the other 12% (mixed powder) lotion,
5 over 20% contained in the processing of the cream.

★ Patent composition material type D: (white powder, produced in response to the request) (Face as it is dissolved in water as make-up water, the body)

2% Lactoferrin, 20% phosphorylated oligosaccharide calcium, other inorganic powder such as 78%, please use in portions in a sealed container.

