

Cosmetic Ingredient

Totipotent **P**rostembryona **F**actor[®]

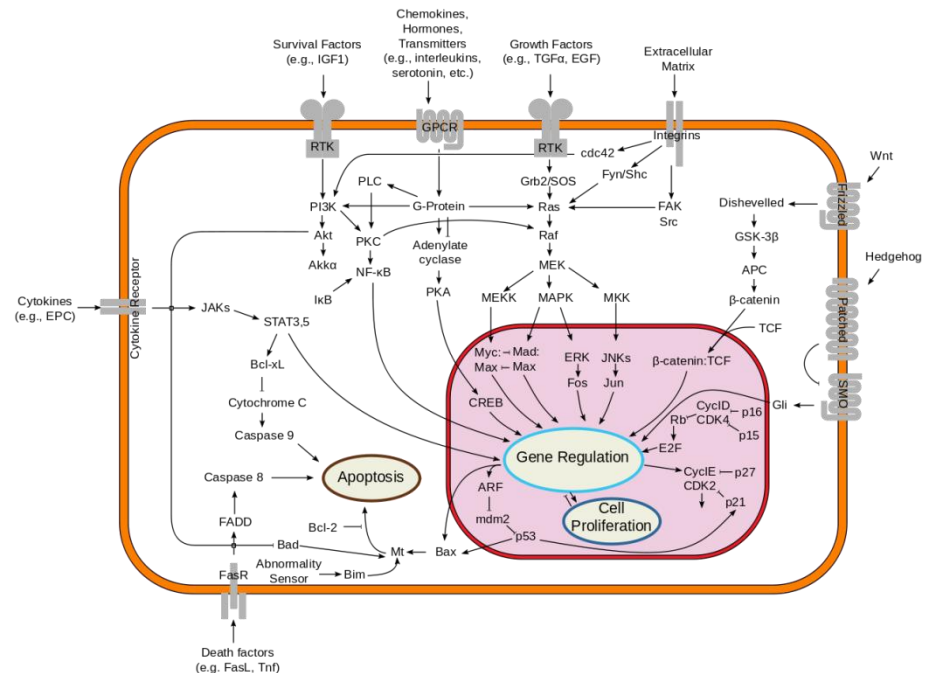


What is Totipotent Prostembriona Factor®

- Extract from embryonic stem cells of deep-sea fish species

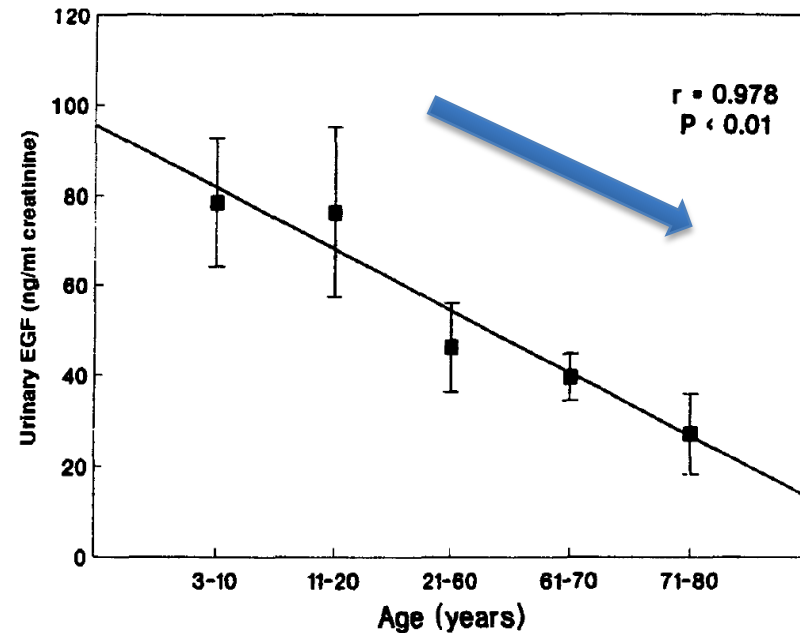
By our exclusive cold-water extraction method, we got all kinds of peptides from embryonic stem cells, which could secrete multiple ingredients such as growth factor and cytokines that induce cell proliferation and differentiation. It is the most favorable condition to retain for the cell regeneration and differentiation of Totipotent Prostembriona Factor® .

Cell signal transduction



Growth Factor decreased with increasing age

Test EGF in urine from 3-79 years old healthy male and female(70 people)a day



Embryonic Stem cells can differentiate into other types of cells, and can also divide in self-renewal in a developing embryo. By secreting lots of peptide molecule, they can also differentiate into all the specialized cells and organs. In that case, that is the reason why embryonic stem cells are extremely precious.



What is Totipotent Prostembriona Factor[®] (TPF)

- Functional cosmetic ingredient

Features : Extracted from precious deep-sea fish fertilized roe (embryonic stem cells) through multiple low-temperature processes.

The worldwide only natural multiple ingredient (growth factors 、 cytokines) that used in skin care materials, which is exclusively developed by Tekho Marine Biotech Co., Ltd.

Recommended dosage : 1 ~ 4%

Experiments suggest that TPF is rich in moisturizing 、 whitening 、 anti-aging and promoting skin wound healing.





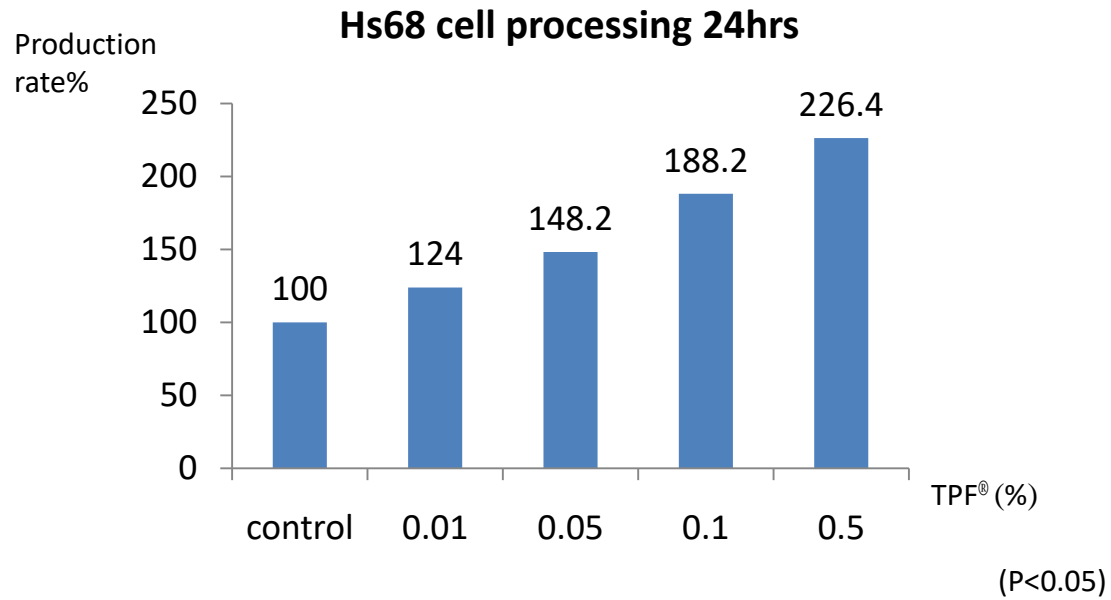
Physiological Action of Cells

- After several cell/animal model tests, we have confirmed that our products have well function on anti-oxidation, inhibition of tyrosinase activity, promoting collagen synthesis and promoting skin wound healing. In that case, Totipotent Prostembryona Factor® possess anti-aging (elastic, firm, anti-wrinkle), whitening, moisturizing and accelerated-healing for all-round skin care.

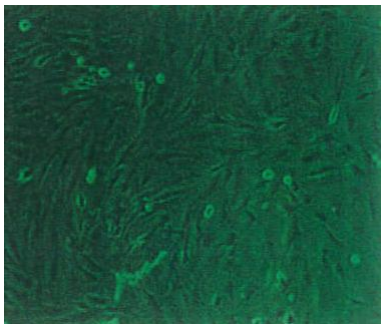
Totipotent Prostembryona Factor® in vitro/in vivo test

- DPPH : $IC_{50}=2.11\text{mg/ml}$
- Assessment of cytotoxicity : 0.5%TPF · Hs68 cells survival rate >90%
- Assessment of tyrosinase activity : 0.0125%TPF with B16, inhibition rate = 23.07%

Collagen production test(Hs68)

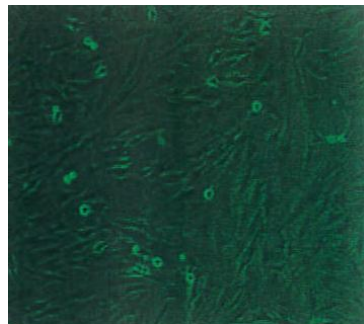


control



0.5%TPF

(200x)



Cells survival rate > 90%



Efficacy of Totipotent Prostembriona Factor®

- Embryonic stem cells have the powerful ability of stimulating cell proliferation and differentiation; in addition, they have secreted multiple growth factors as well.
- We use our exclusive cold-water extraction method to get the multiple growth factors. Totipotent Prostembriona Factor® can not only act on epidermis layer but also on dermis layer, that stimulates fibroblast to secrete collagen, inhibition of melanin synthesis, and accelerated wound-healing. It shows the remarkable potential to exceed the limit of traditional cosmetic products which only act on skin epidermis layer and reach real anti-aging efficiency.

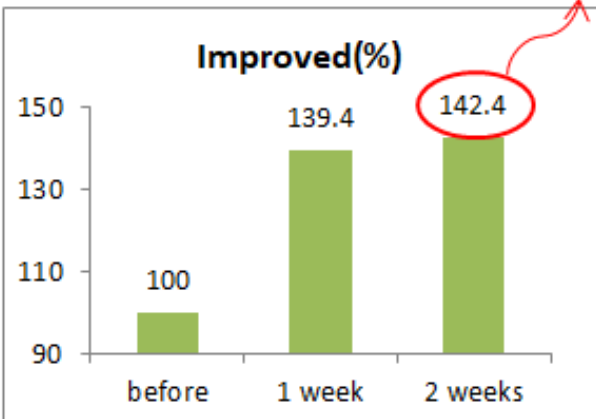
Human Skin Test

Form 1 : Face Mask

- Period : 2 weeks
- Frequency : 1 per day
- Test Item : Improvement of moisturizing degree, elasticity and firmness

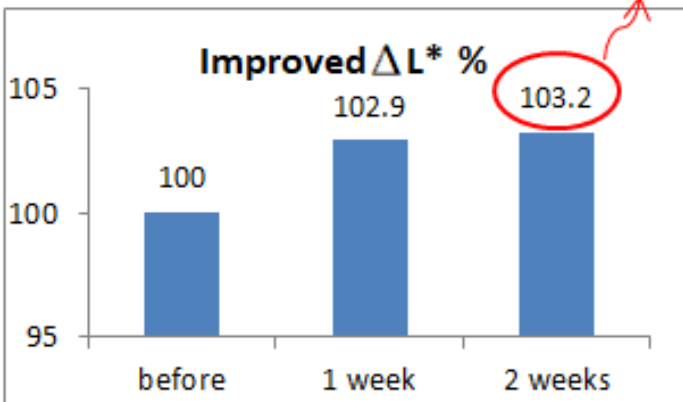
Moisturizing degree

42.4% UP



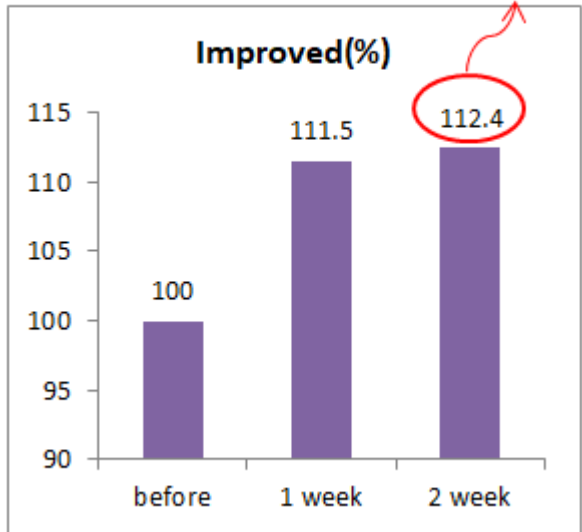
Whiteness

3.2% UP



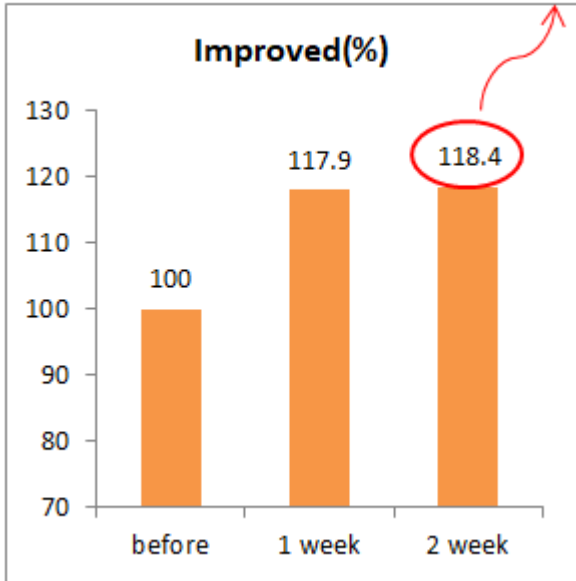
Elasticity

12.4% UP



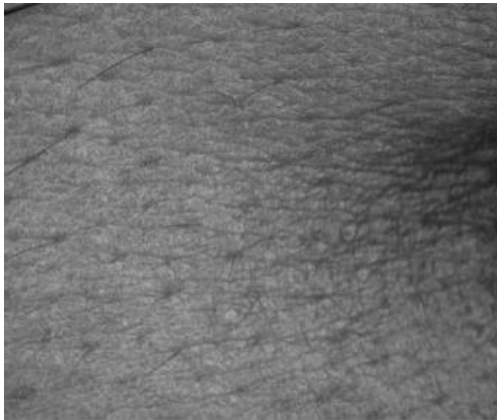
Firmness

18.4% UP

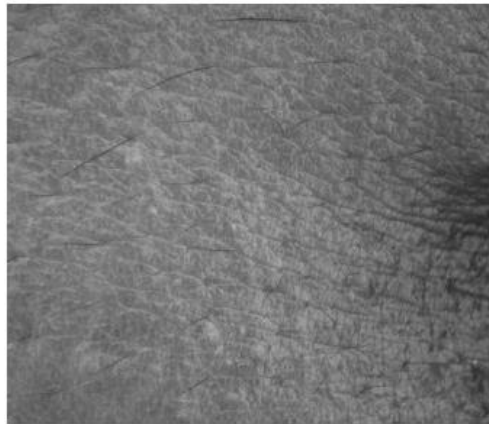


Form 2 : Eye Gel

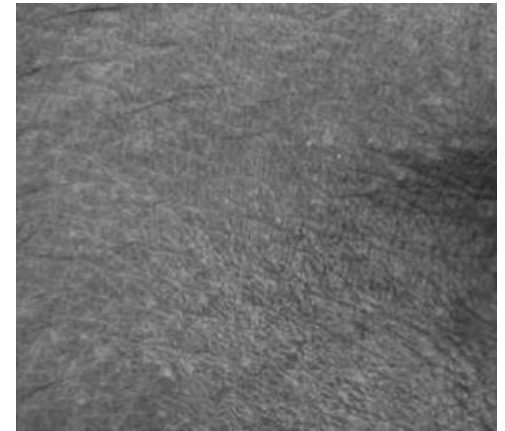
- Period : 4 weeks
- Frequency : 1 per day
- Test Item : Crow's Feet



Before



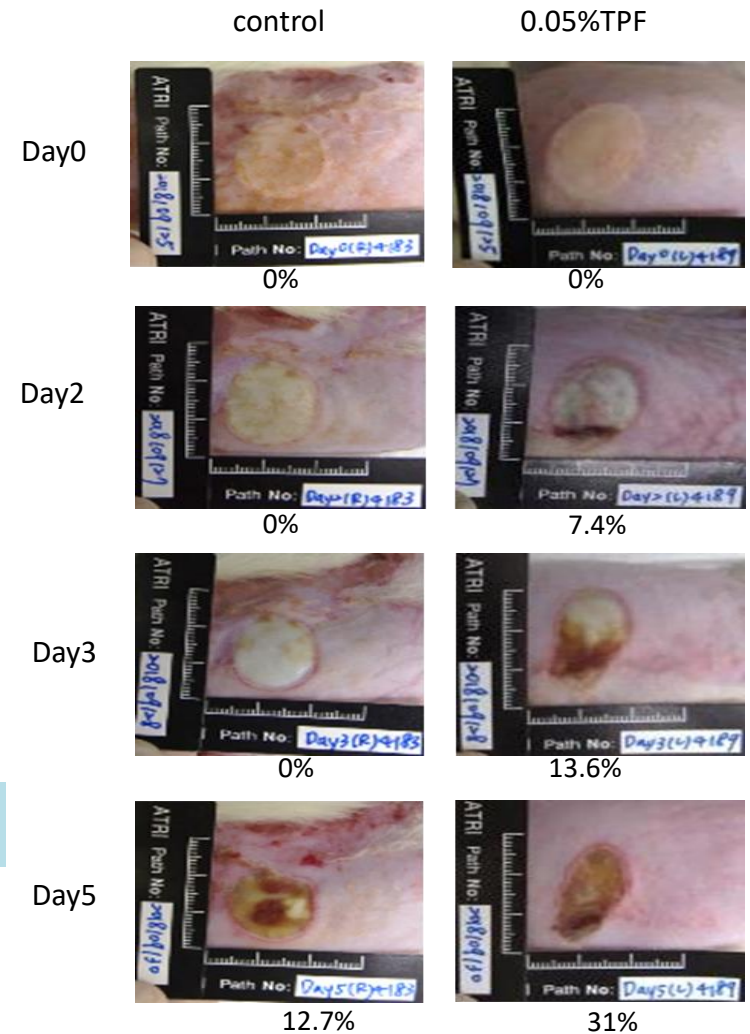
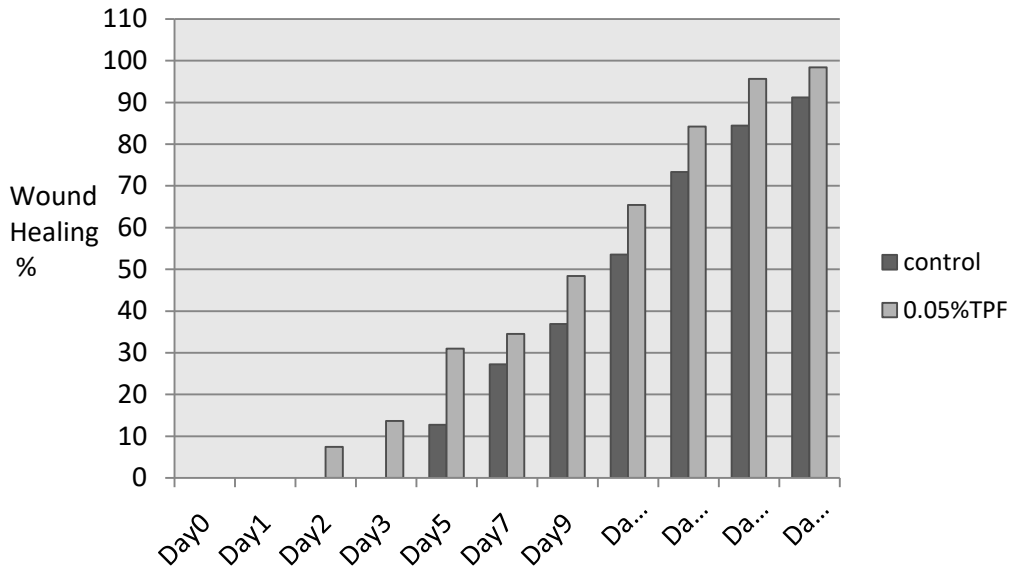
2 weeks reducing **15%**



4 weeks reducing **17%**

Animal Model - Burning wound healing

Deep Second Degree Burns
(92 ° C copper rod 12 seconds _2 cm round wound)



Promote skin wound healing 2 ~ 3 days earlier



Safety of Totipotent Prostembryona Factor®

- Our product is naturally extracted from deep-sea fish species and solvent free during the process. According to the clinical skin patch safety test, Totipotent Prostembryona Factor® cause no itch, redness and tingling that can be safely applied to human skin.

Test Item	Result
Aquaculture drug residue	Negative
Heavy Metal (As 、 Pb 、 Cd 、 Hg)	Negative
Total plate count	<100 CFU/g
E. coli	Negative
Assessment of cytotoxicity	safe
Skin patch safety test	safe



Comparison between Totipotent Prostembryona Factor[®] and Roe Extract




Item	Totipotent Prostembryona Factor [®]	Roe Extract
From	Active fertilized roe	Inactive roe
Ingredient	Stem cells : growth factors 、 cytokine 、 peptide	protein 、 nucleic acid
Efficacy	moisturizing 、 whitening 、 anti-aging and promotes skin wound healing	moisturizing
Market visibility	Exclusive	common



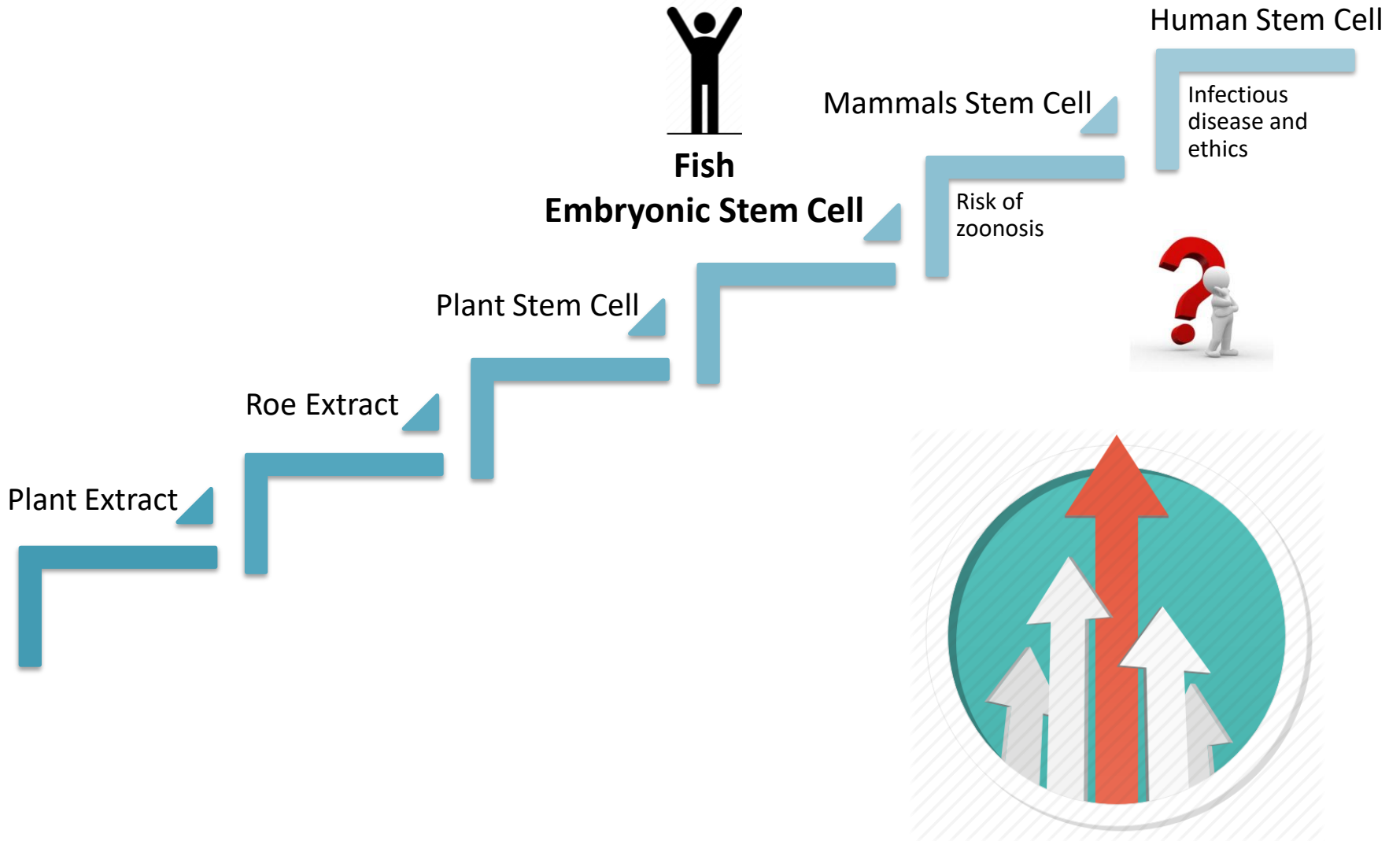
Comparison between Totipotent Prostembriona Factor[®] and Plant Stem Cell Extract



	Totipotent Prostembriona Factor [®]	Plant Stem Cell Extract
From	Embryonic Stem Cell	Stem cell
Biocompatibility	Higher 	General
Efficacy	Excellent	Good

Biocompatibility with human being

- **The BEST + FIRST Choice**





Method of extract Totipotent Prostembryona Factor[®]

- Our product extract from stem cells of deep-sea fish species, which secreting multiple peptide. It is a friendly biological factory that is consistent with sustainable use and environmental protection.





Officially Launch

- Totipotent Prostembriona Factor[®] has been exclusively approved by the International Cosmetic Ingredient Name (INCI NAME). Above all, we have already applied for several international patents and trademarks.



MSDS-TPF



Specification-TPF



TPF-COA