



proton

We make future fresh.



proton
+HOLDINGS



proton
MAGNETIC FREEZER

We make future fresh.



proton
DEFROSTING

We make future fresh.

proton
+DINING

PROTON

CONGELACION MAGNETICA DE SUSHI



proton
EUROPE

www.proton-europe.com

1. Damage to muscle structure

- Cell separation: the water that is outside the fibers freezes before the inside, generating an osmotic force that causes liquid to flow from the inside to the outside.
- Damage to membranes and proteins, by the ice crystals formed.
- Protein denaturation due to changes in the non-frozen aqueous matrix: in osmotic pressure, pH, ionic strength, etc.

3. Microbial development

- Much of the flora is sub-lethally damaged.
 - Thawed meat is more susceptible to microbial growth and alteration, so it usually has more contamination than fresh meat (at the same storage time).
- Microbial development stops at -12°C (for certain more resistant fungi)

4. Changes in texture

- Less juiciness and
 - More hardness.
- Associated with changes in muscle protein:
- Shortening by rigor
 - Protein Denaturation
 - Increase in cross-links between proteins (due to denaturation phenomena and the presence of oxidation products that serve as a bridge between functional groups of amino acids).

5. Changes in taste and color

- Decreased flavor intensity due to loss of flavor precursors and aromas in exudates.
 - Possible collection of aromas from outside during freezing, storage and defrosting.
 - Oxidative thickening of fats and discoloration of pigment during storage. Its degree depends on all those factors (intrinsic and extrinsic) that affect it.
- At temperatures between -30 and -40°C , oxidation reactions practically stop.

2. Moisture losses

- Decrease juiciness and make meat harder.
- Altered appearance, taste and texture when freezing burns occur
- Economic losses due to weight loss.

FREEZER EFFECTS

1. Damage to muscle structure
2. Moisture loss
3. Microbial development
4. Changes in texture
5. Changes in taste and color
6. Changes in nutritional value

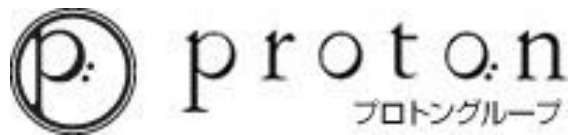


6. Changes in nutritional value

- Losses of water-soluble nutrients due to exudate (without a significant impact on the nutritional value).
- If there is oxidation there is also loss of nutrients susceptible to oxidation reactions.

PROTON

MAGNETIC FREEZER



THE NEW GENERATION OF FREEZERS: PROTON ®

In today's extremely changing food industry, customers demand quality, seasonal, "newer" products every day, at reasonable prices, with high availability and that comply with all sanitary standards. In order to satisfy all these demands we must use the best technology to process them, keep them fresh, tasty and healthy, even if they have been frozen.

Keeping all the organoleptic properties intact in a thawed product was up to this moment something unthinkable to achieve, because even with the best current freezing (cryogenic) methods, color changes occur and exudates and liquids appear when thawing, causing obvious alterations of the original product due to the damages caused by the size of the crystals formed and by the cell destruction during freezing.



PROTON ® FREEZER belongs to a new generation of freezers, which unlike other systems that also use magnetic fields (CAS), its use is widespread in Japan for its proven effectiveness for the realization of a perfect freezing, when the differences between products disappear defrosted and fresh product and giving rise to a new category:

“the fresh product in frozen”.

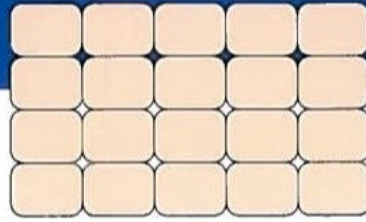
PROTON ® FREEZER technology is used in many different types of industries and sectors, not only in Japan, but in many Asian countries.

It is, in short, the most perfect form of freezing that exists today.

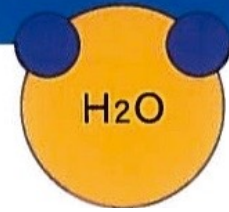


FREEZING PROCESS

(PASS from FRESH ESTATE TO FROZEN)



FOOD CELLS



CONTENT
IN WATER

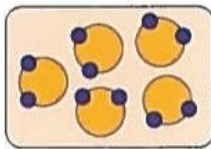
FREEZING TRADITIONAL

-FREEZER
-BATTER
-CAMARA

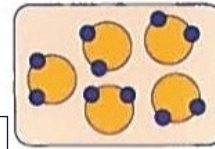
PROTON MAGNETIC FREEZER



Free water
freezes producing ice
crystals that grow
inversely at the speed of
the freezing technology
used, i.e. when the
passage time for ice
crystal formation is long

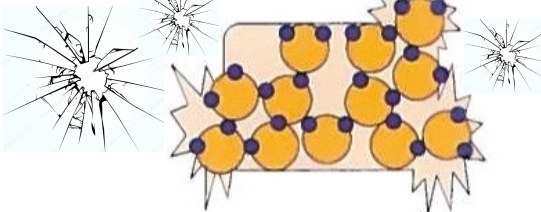
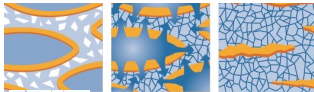


FREEZING PROCESS



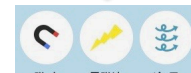
The product freezes while a
static magnetic field and an
electromagnetic wave
radiate in a predetermined
direction

CREATION OF BIG CRYSTALS

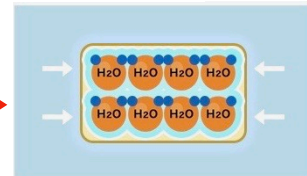
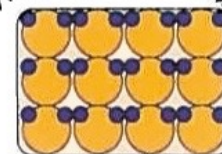


THE CRYSTALS EXPAND
WHEN THE WATER (liquid)
BECOMES ICE (solid), CAUSING
CELL RUPTURE

MAGNETIC
FIELD



ELECTROMAGNETIC
WAVES

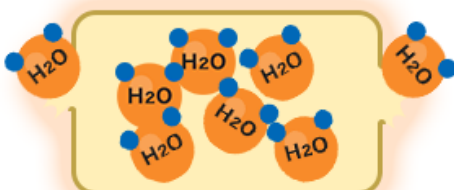


ORDINATION OF WATER MOLECULES
AVOIDING THE EXPANSION OF THE VOLUME OF THE CRYSTALS
OF ICE WHEN FREEZING (NANOCRISTALES)

DEFROSTING



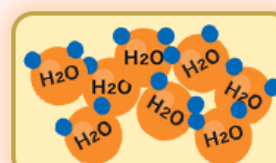
CELL
RUPTURE



It is MANIFESTED in the form of EXUDATES
(DRIPPING) and CAUSES CHANGES in the CELL
STRUCTURE (CHANGES in the TEXTURE, COLOR,
FLAVOR, ...) and LOSS OF NUTRIENTS and OTHER
COMPONENTS



When freezing, the water
molecules align,
maintaining their linear
structure and preventing
the growth of the crystals
that cause cell breakage



ORIGINAL
CELLULAR
STRUCTURE

KEEPS the ORIGINAL CELL STRUCTURE
(can be re-frozen) and PRESERVES ALL
ORIGINAL FOOD ORGANOLEPTIC QUALITIES
(COLOR, TEXTURE, TASTE, ..)

PROTON MAGNETIC FREEZING

DEALER IN
EXCLUSIVE
OUTSIDE ASIA



**FREEZE
ALL CLASS
FOOD**

FISH, MEAT, VEGETABLES, BREAD,
PASTRY, DAIRY, COOKED DISHES

**KEEP THE
CELL STRUCTURE
NO DAMAGE
NO BREAK CELL**

**CONTROL
THE CREATION
& SIZE OF
WATER CRYSTALS
THANKS TO THE
ELECTRO
MAGNETICS
FIELDS**

**NO DRIP (LIQUIDS)
& WITHOUT CHANGES
TO DEFROST
COLOR, TEXTURE, FLAVOR**

Keep all the original
**ORGANOLEPTIC
QUALITIES**
TASTE, COLOR, TEXTURE

**LOW DEHYDRATION
HIGHER PERFORMANCE**

**GREATER SPEED AND
BEST QUALITY
THAT THE BLAST CHILLER**

PF-15



**UNIFORM FREEZING
INTERIOR AND EXTERIOR**

**DELICATE FREEZING &
NOT AGGRESSIVE
AS THE NITROGEN**

**IT ALLOWS
DEFROST
& FREEZE AGAIN**

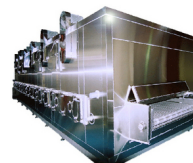
**KEEP INTACT
NUTRITIONAL VALUES**



**ELIMINATES BACTERIA,
MICROORGANISMS,
PATHOGENS &
ANISAKIS**

15

KG/HOUR



500

KG/HOUR

CIB® Culinary Institute
of Barcelona
Cooking Tomorrow

ARRANGE A VISIT
to know PROTON TECH
proton@innovafish.com
Tel. +34 627 925 103

RESTAURANTS WITHOUT KITCHEN
proton
+ DINING

**LAST
GENERATION
OF FREEZERS
IN JAPAN**



—GUIDE MICHELIN—
**ESTRELLAS
MICHELIN**
2020



**ONLY
TECHNOLOGY
VALID FOR
FREEZE
SUSHI**

Become a
MEMBER
proton

RECOMMENDED BY THE MINISTRY OF INDUSTRY OF JAPAN



We make future fresh

PROTON CAR
全国巡回!! プロトン号



www.proton-europe.com

GAMA DE CONGELADORES PROTON & REBORN



PF-15

CAPACITY CYCLE 15 kg.
SIZE 1200Wx870Dx1700H
WEIGHT 450 Kg
TEMPERATURE air blast -35/-38°C
CAPACITY 5 trays x 1 roo
TRAYS NUMBER 5
TRAYS DIM. 600 x 400 x 20

PF-30

CAPACITY CYCLE 30 kg.
SIZE 1660Wx1205Dx1830H
WEIGHT 750 Kg.
TEMPERATURE air blast -35/-38°C
CAPACITY 8 trays x 1 room
TRAYS NUMBER 8
TRAYS DIM. 600 x 400 x 20H
EXTERNAL CONDENSIG UNIT

PF-60

CAPACITY CYCLE 60 kg.
SIZE 2440Wx1250Dx2050H
WEIGHT 1.200 Kg.
TEMPERATURE air blast -35/-38°C
CAPACITY 8 trays x 2 room
TRAYS NUMBER 16
TRAYS DIM. 600 x 400 x 20H
EXTERNAL CONDENSIG UNIT

PF-150

CAPACITY CYCLE 150 kg.
SIZE 3400Wx1904Dx2320H
WEIGHT 3.900 Kg.
TEMPERATURE air blast -35/-38°C
CAPACITY 8 trays x 4 room
TRAYS NUMBER 32
TRAYS DIM. 600 x 600 x 20H
EXTERNAL CONDENSIG UNIT

PF-3 (HOIHOI)

CAPACITY CYCLE 3 kg.
SIZE 900Wx750Dx1850H
WEIGHT 250 Kg.
TEMPERATURE air blast -25°C
CAPACITY 300L
TRAYS NUMBE 4
TRAYS DIM. 542W x 330D x 250H



TU-300

CAPACITY CYCLE 300 Kg.
SIZE Made-to-order. (Speed of the conveyor belt can be customized)
BELT CONVEYOR SIZE 1400x9400
MAIN BODY WEIGHT 12.000 kg
INSIDE TEMPERATURE SETTING
air blast system -35/-38°C
EXTERNAL CONDENSIG UNIT

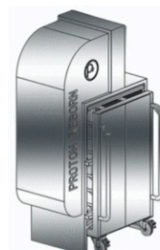


TU-500

CAPACITY CYCLE 500 Kg.
SIZE Made-to-order. (Speed of the conveyor belt can be customized)
BELT CONVEYOR SIZE 1400x13900
MAIN BODY WEIGHT
INSIDE TEMPERATURE SETTING
air blast system -35/-38°C
EXTERNAL CONDENSIG UNIT

TU-150

CAPACITY CYCLE 150 Kg.
SIZE Made-to-order. (Speed of the conveyor belt can be customized)
BELT CONVEYOR SIZE 1.200Wx3.000L
MAIN BODY WEIGHT 4.000 kg
INSIDE TEMPERATURE SETTING
air blast system -35/-38°C
EXTERNAL CONDENSIG UNIT





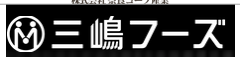


REBORN

SIZE Made-to-order
CAPACITY Expandable until 300 Kg.
TEMPERATURE air blast-30/-35°C
CONFIGURATION 3 stages
CONFIGURATION
Nominal 77 KG./1 loading cart
40 Kg. (10 trays)
60 Kg. (15 trays)
TRAYS DIMENSION 600Wx600Dx350H
EXTERNAL CONDENSIG UNIT

PROTON

SUSHI SECTOR

CLIENTES JAPON sector SUSHI

株式会社 春番屋	ICHIBANYA CO.,LTD.	ICHIBANYA CO., LTD.	https://www.ichibanya.co.jp/comp-en/	JAPAN	RICE CURRY	
	FENIX	FENIX	https://fenix.jp/service/	JAPAN	SUSHI	OK
	KAKINOHASUSHI	KAKINOHASUSHI	http://kakinohasushi.com/eisei/index.html	JAPAN	SUSHI	EJE
	MISHIMA FOODS	MISHIMA FOODS	http://www.mishimafoods.com/referral-facility	JAPAN	SUSHI	EJE
	RYOUTEIKOUIYOU	RYOUTEIKOUIYOU	http://ryouteikoujyou.jp/	JAPAN	SUSHI BENTO	EJE
	MESITOKU	MESITOKU	https://mesitoku.co.jp/info/620.html	JAPAN	SUSHI Rice food	OK
	TASTY FOODS	TASTY FOODS	http://www.tastyfoods.co.jp/proton.htm	JAPAN	SUSHI Rice product	OK
	MIYOSHINO	MIYOSHINO	http://www.miyoshino.co.jp/	JAPAN	SUSHI rice with veg & sandwich	

②飲食店運営事業4>

従来の冷凍寿司の概念を覆す、高品質冷凍寿司「プロトン歌舞伎寿司」



極 付
厳選素材
特上にぎり



近海 本マグロ



近海 中トロ



北海道 水蛭



五島列島 車海老



五島列島 車海老(生)



豊後 真鯛



北海道 帆立



隠岐 烏賊



カナダ サーモン



玉子

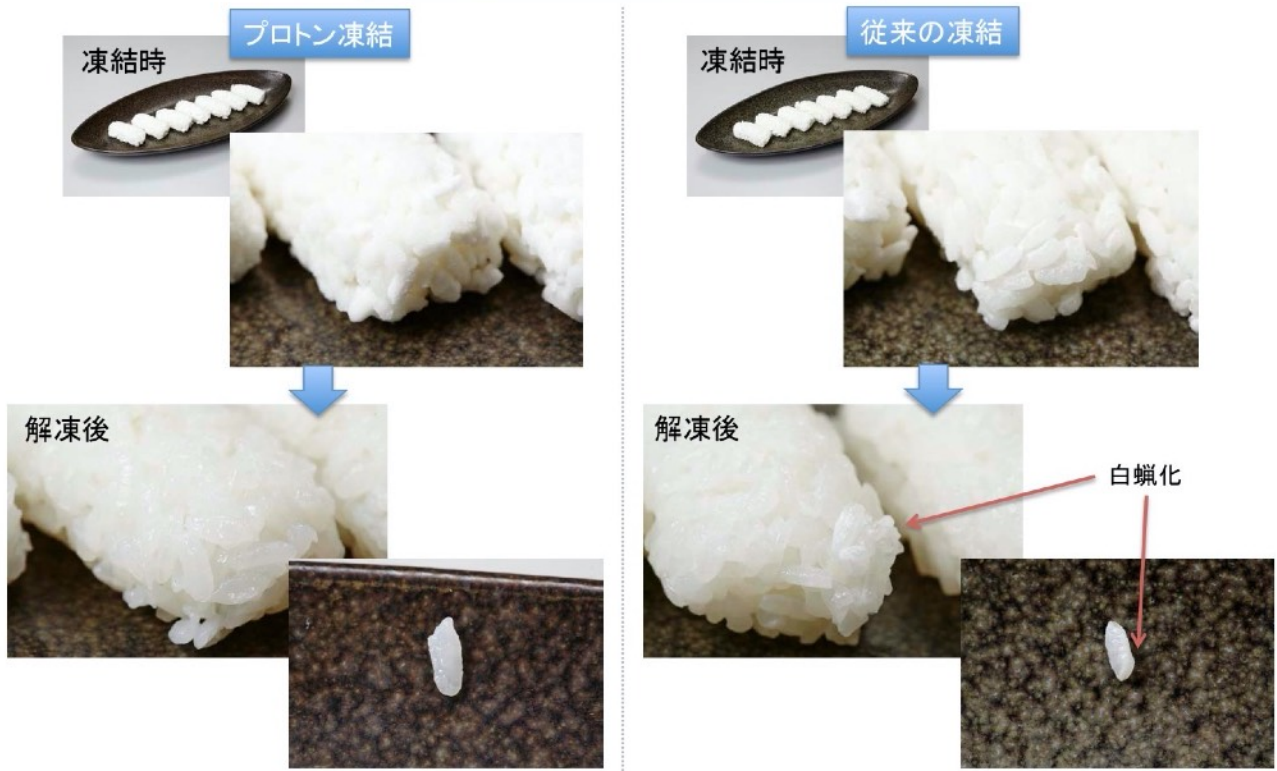


凍結状態イメージ

シャリ・ネタ一体での冷凍も実現



白米(寿司シャリ)の比較



飯の粒が潰れず、白く固まる現象が起きない(白蟻化現象)

"みんな笑顔に" の気持ちを込めて

全ての介護現場のみならずから、そしてご家族様からお声を頂き完成致しました。



日本料理界トップクラスの料理長が、本物の味を皆様にお届けしたい、の気持ちと世界随一の凍結技術が融合しついに**お寿司**が完成致しました。

株式会社 I F P
日本ケミカル株式会社 正規販売代理店

恵方巻

二月三日の部分の夜に
歳徳神(としとくじん)のいらっしゃる方位
「恵方(えほう)」を向いて
願い事を思い浮かべながら一言も喋らずに
丸かじりするのが慣わしとされています。
今年の恵方は東北東です

ご予約承り中
1月31日(木)まで

※写真はイメージです

イーハトーヴSora 特製恵方巻	1本 420円(税込み)
福を巻き込む七つの具材 ・高野豆腐 ・しいたけ ・あなご ・厚焼き玉子 ・かんぴょう ・かにかまぼこ ・きゅうり 入り	3本入 1,200円(税込み)

※ご予約は裏面のお申込み用紙をご利用ください

株式会社 三嶋フーズ

日本ケアミール株式会社



冷凍惣菜食品



最新の特種冷凍機(ユースフル・フリーザー)を使用して凍結することで品物の細胞破壊を防ぎ、ドリップを少なくできました!!
"冷凍とは思えない"しっかりとした食感が味わえます!!



株式会社 奈良コープ産業

Mensaje del Presidente Perfil de la

seguridad y salud de los alimentos

empresa Contenido del negocio.

30 años Historia de la

Contenidos empresariales





寿司・宴会 ほてい様『ふるさと納税でのおせち』〈プロトン使用例〉

経営をされている中、おせちの製造は数に限りがあり計画必要。冷凍が出来るとその問題が
解決出来るとの事で今回プロトン凍結を使用。まずは50セットから。

かった点)

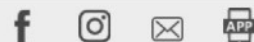
トンダイニングのおせち製造方法を参考に入れ子式にて同じ種類を製造していく。最終、詰合せのみして、
1日に間に合うよう計画を立て、作業された。計画通り、製造が出来、無事に出荷まで。(25日無事出荷完了)



寿司・宴会 ほてい
2017年12月29日・@
我が街「川南町」に「ふるさと納税」頂き当店の返礼品を運んでいただいた
お客様へ！
仕入れ→製造→発送まで（本日26日）責任持って完了いたしました！あり
がとうございました！



ISETAN
The Japan Store



〔「二段重」おせち料理〕

最先端の技術、安心のプロトン鮮度冷凍
の採用により「美味しさ・食感・旨味」
を損なわず、そのまま全国のご家庭にお
届けできるよう心を込めて調理いたしま
した。



FOOD | LGF | 23 MAY 2017

**Flavour-filled bento prepared
with proton freezing
technology**

プロトンダイニング

冷凍鮭



proton

We make future fresh.

超高品位凍結技術がお届けする
シェフの手づくり冷凍食材

凍結状態



解凍状態



包装状態



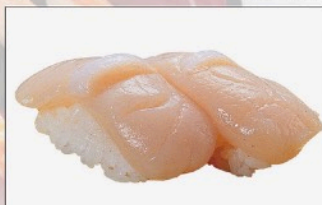
※実際の品目とは異なります

お品書き



サーモン

青森帆立



お品書き



沖縄そでいか

鰻





氷の粒を大きくしないフリーザー ユースフル・フリーザー USEFUL・FREEZER

プロトン凍結効果

品物が凍る時の「氷の粒」を出来るだけ大きくしない様にし、その品物をそのまま（凍結劣化をおさえる）の状態で凍結します。したがって品物の細胞破壊を防ぎ、ドリップを少なくします。

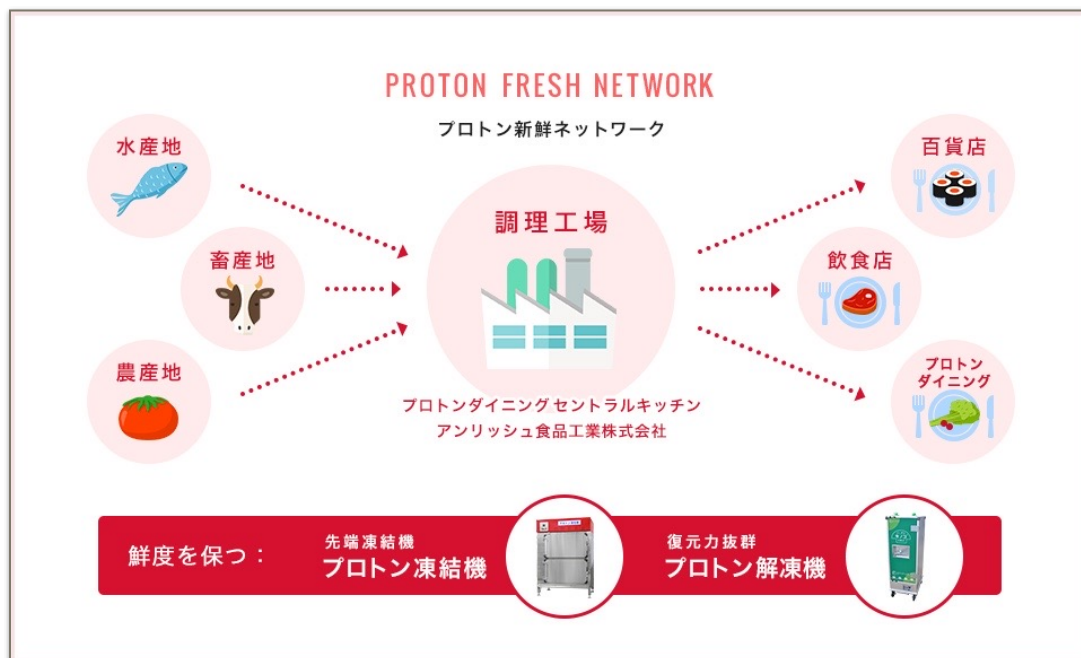
プロトン凍結の原理

水が氷になる時の氷核生成に効果を与え、核を多数生成し大きな氷結晶の成長を防げることを目的としています。結果、食品細胞の破壊を防ぎ、ドップ量を少なくします。

<p>①</p>  <p>多くの氷核を生成する</p>	<p>バラバラに存在している水分子を均等磁束密度環境【強力な磁束発生機構】、電磁環境【電磁波発生機構】に置く事で、核を多数生成する事を目的としています。</p>
<p>②</p>  <p>ムラなく早く凍らせる</p>	<p>【差圧方式（ポテンシャル流）】の送風方式でムラのない冷風循環でより早い凍結を実現しています。</p>

今まで、不可能とされた商品（野菜・魚など）を素材の味を生かしたまま凍結する事が可能になりました！！





JAPON NO SE EQUIVOCA. APROVECHESE VD. TAMBIEN DE TODAS LAS VENTAJAS


Latest Freezing Technology "Proton Freeze"

機械ビジネスと食品ビジネスの融合

先進性冷熱機器（プロトン凍結機・解凍機共に特許取得済）を
基礎に新しく・美味しいプロトン凍結品の提供を行います。

冷熱機器製造・販売
研究・開発

食品製造・販売
レストラン経営

 proton
プロトングループ

>

 RFB RYOHO
FREEZE
SYSTEMS

 proton-
EUROPE

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T: +34 627 925 103
proton@innovafish.com