



Nanogenizer

電動式高壓奈米均質機

for 微脂體 · 微懸浮液 · 奈米分散 · 細胞破碎

內容

- 主要規格及特點
- 鑽石作用腔
- 使用方式
- 主要應用



主要規格及特點

主要規格

最大壓力	30kpsi (可客制45kpsi)
處理速度	100 mL/min (6L/hr)
最小樣品量	2 - 5mL
殘留量	~1mL
驅動方式	電動馬達 (非空壓機)
接觸樣品材質	FDA approved 製藥級-316L SS
控制器	數位全彩觸控
控制參數	壓力、體積、時間

數位控制-壓力 · 時間 · 體積

Genizer
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RUN COM PWR

Customer Setup for Homogenizer

Functions

Auto Stop Setup

Time Sec (Default)

Volume mL

Pressure psi

Temperature °C

Small Volume Sample

Stoke mL (Default)

Cycle times

Maintenance

Calibration

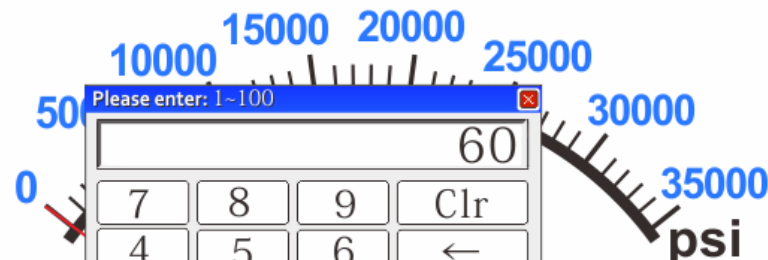
Time y m d h m s

Piston Movement

2014-11-12 14:07:10

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RUN COM PWR



Please enter: 1~100

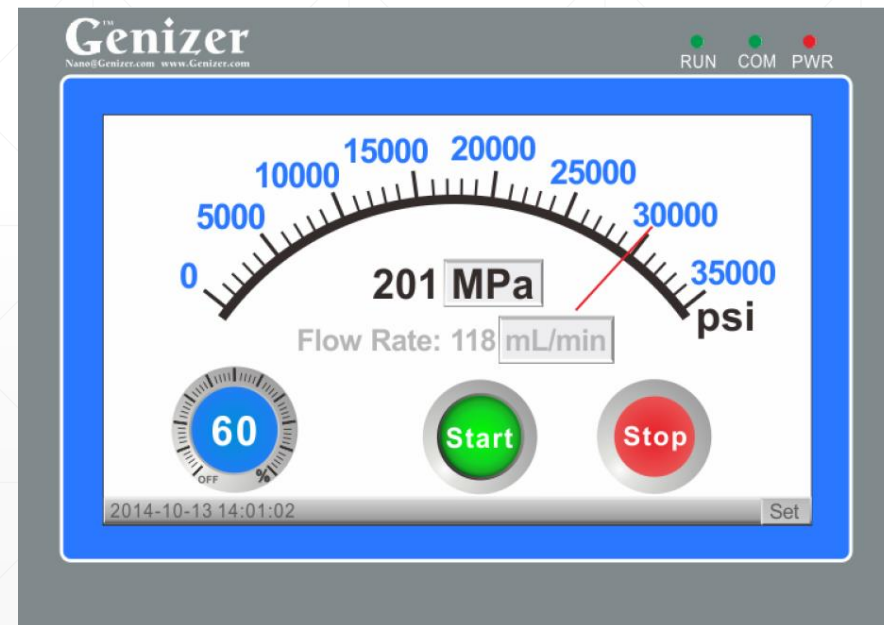
7	8	9	Clr
4	5	6	←
1	2	3	Esc
.	0	-	Enter

Power **60 %**

2013-11-12 14:05:32

特點

- 小量低殘留量適合昂貴量少之樣品
- 可從小量到大量
- 數位觸控操作簡單
- 可scale-up
- 高C/P值

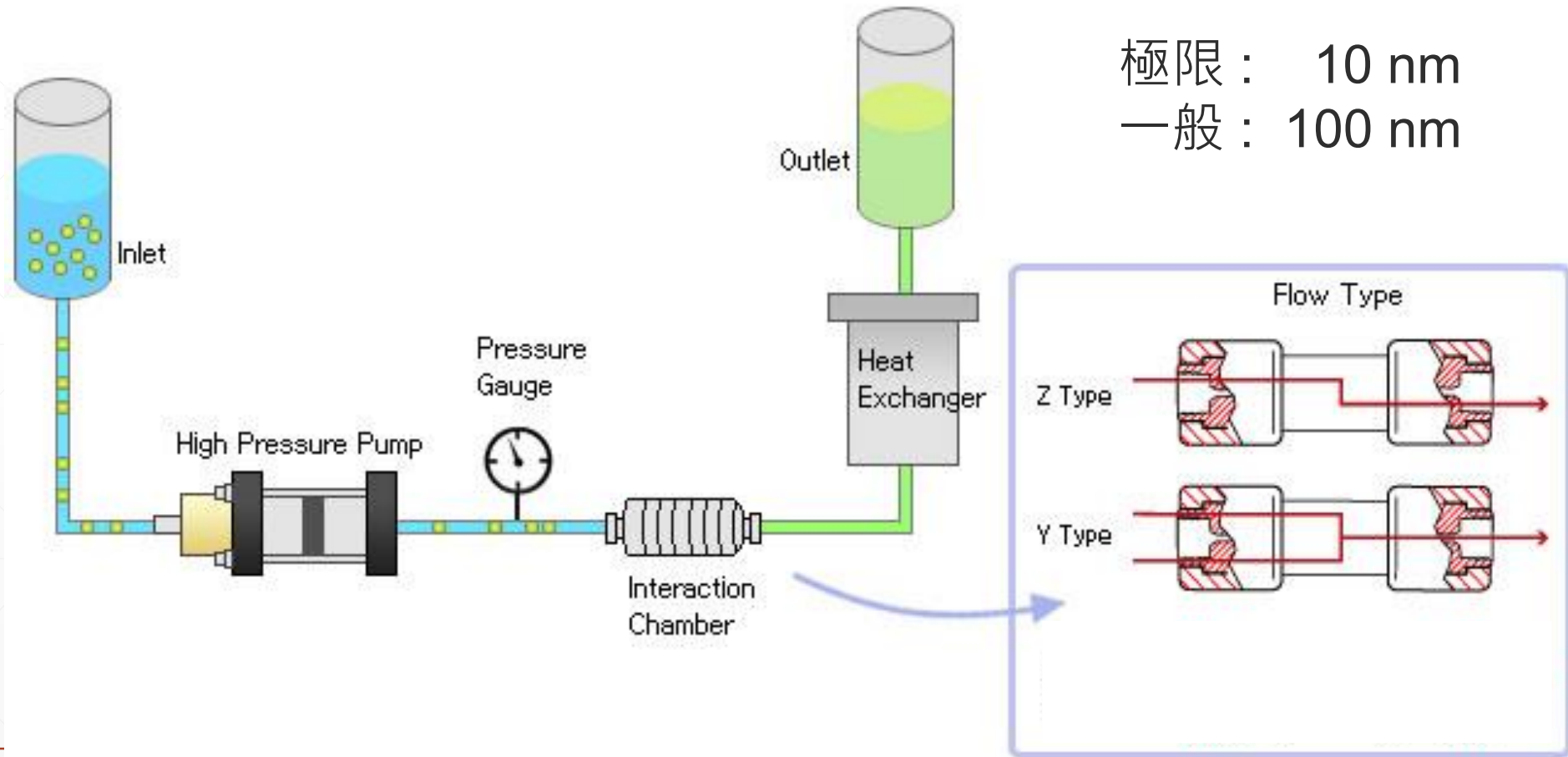


鑽石作用腔及配件

Patent Diamond Interaction Chamber

- Y型作用腔
- Z型作用腔
- 熱交換管
- 注射筒
- 不銹鋼漏斗

高壓作用腔-Interaction Chamber



極限： 10 nm
一般： 100 nm

Y型作用腔

- 適用：

乳化：微脂體

- 常用：F12Y (內徑75 μm)
F12Y-RT cooling

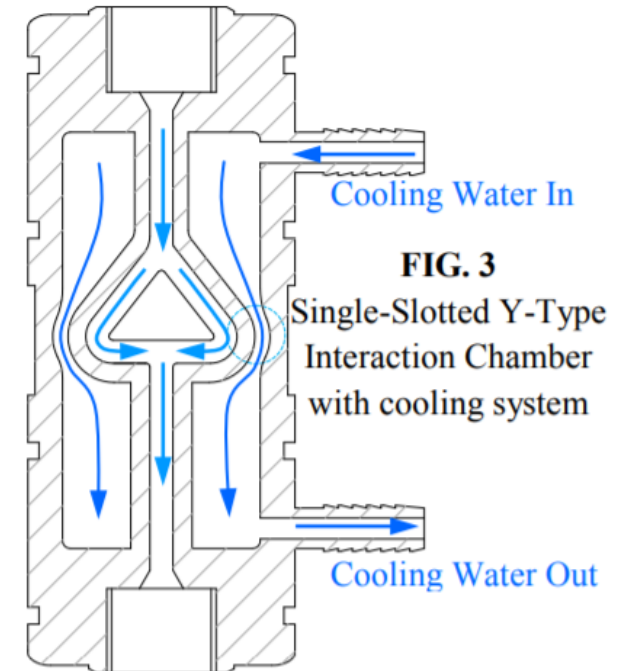
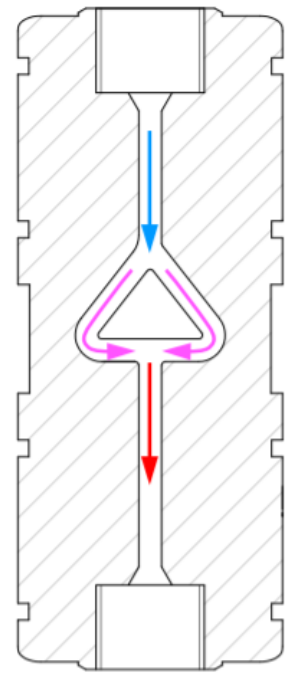
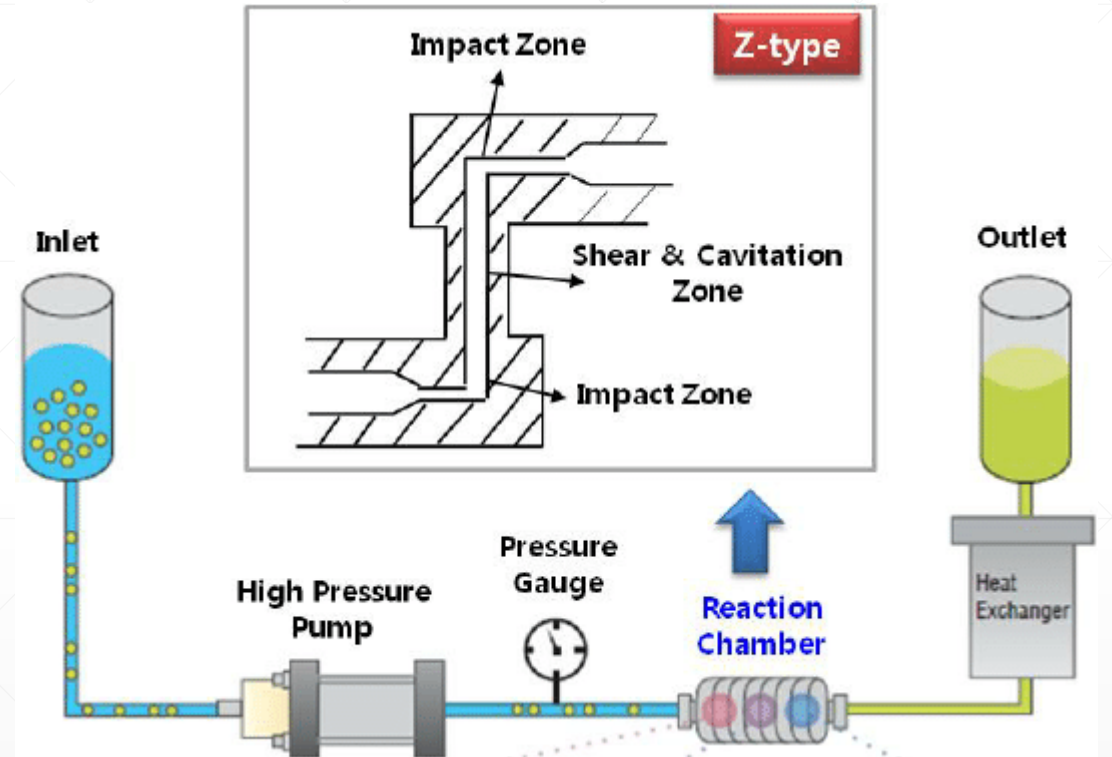


FIG. 3
Single-Slotted Y-Type
Interaction Chamber
with cooling system

Z型作用腔

- 適用：
細化: 微懸浮藥物
分散: 石墨烯 · 奈米碳管
破碎: 細胞破碎
- 常用: H10Z (內徑 $100\mu\text{m}$)
- 有其他內徑可選 ($87\text{-}300\mu\text{m}$)



Genizer 鑽石作用腔特色

- 屬於微射流(microfluidization)原理之高階均質機腔體
- 316L不銹鋼經過電解拋光及內部鈍化可用於醫藥行業
- 更長的使用壽命 (一般約5年)
- 及時降溫設計(-RT)可以保留蛋白活性
- 可以相容於其它大型均質機，如Microfluidics, DeBEE等

使用方式

- 小量批次/連續
- 重覆循環

小量批次/連續使用



配件選擇

- Syringe : 10/20/50/100/200/500mL
- SS cylinder : 500ml/ 1L/ 2L
- Multi-tube Heat exchanger (316L) : 200mL/min









重覆循環+cooling



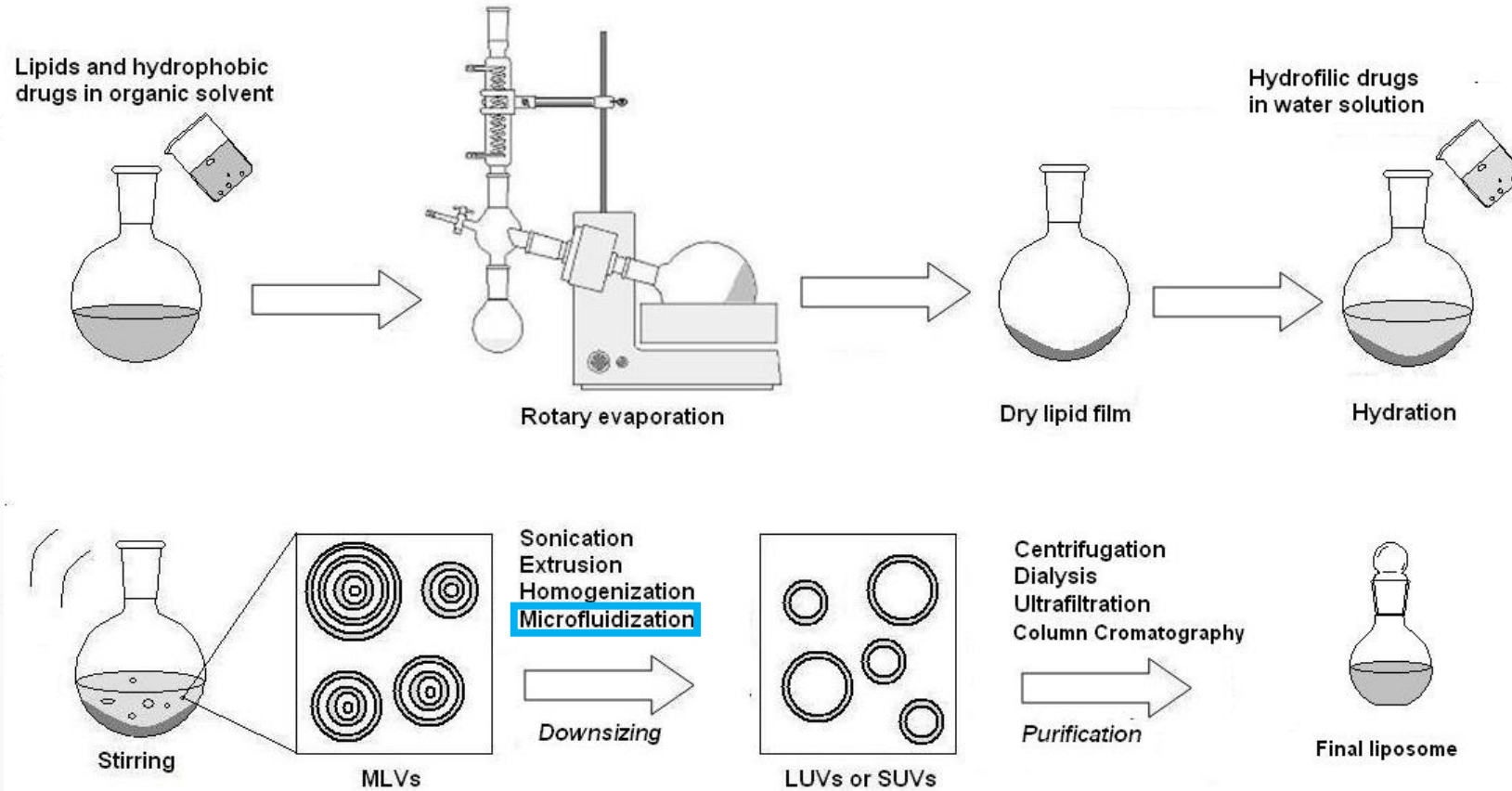
主要應用

- 乳化
- 細化/分散
- 破碎

乳化-Emulsions (生技、醫藥、化粧品、食品)

Emulsions	Oil in water emulsions	Water in oil emulsions	Oil emulsion	Food	Liposome (o/w)	Liposome (w/o)
						
Sample	Fat emulsion Prostaglandin	Cosmetics	Dimethicone Fuel	Milk	Doxorubicin	DNA lipopolyplex
Pressure	~20,000psi	~10,000psi	~20,000psi	~10,000psi	~20,000psi	~8,000psi
Chamber	F20Y, F12Y	F20Y	F20Y, F12Y	F20Y	F20Y, F12Y	F20Y

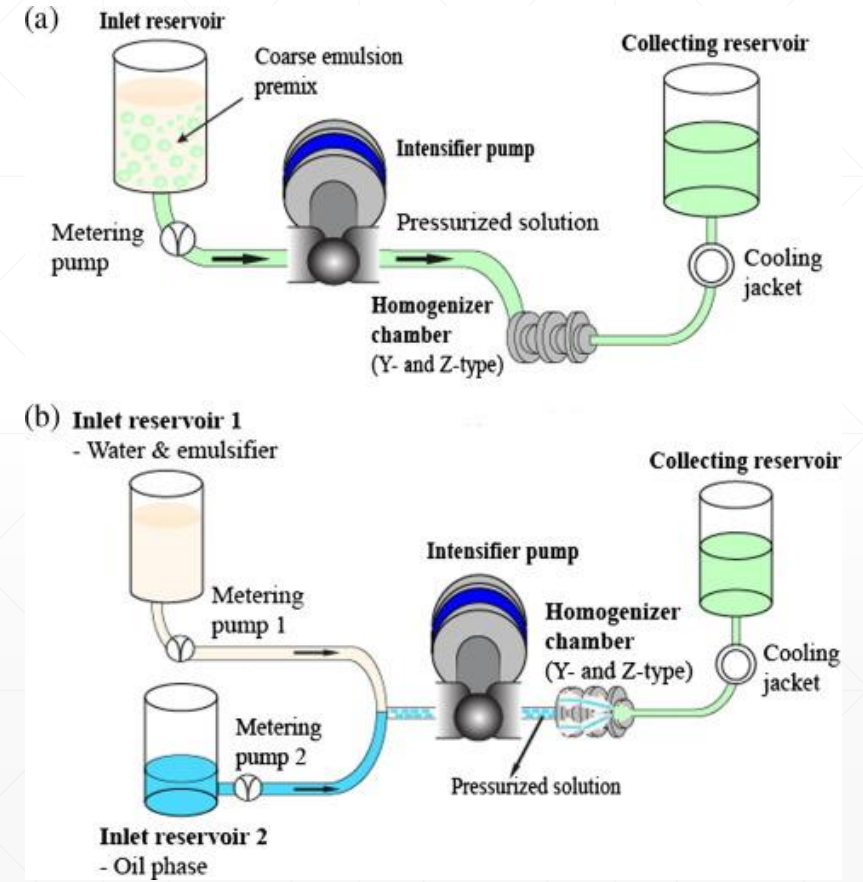
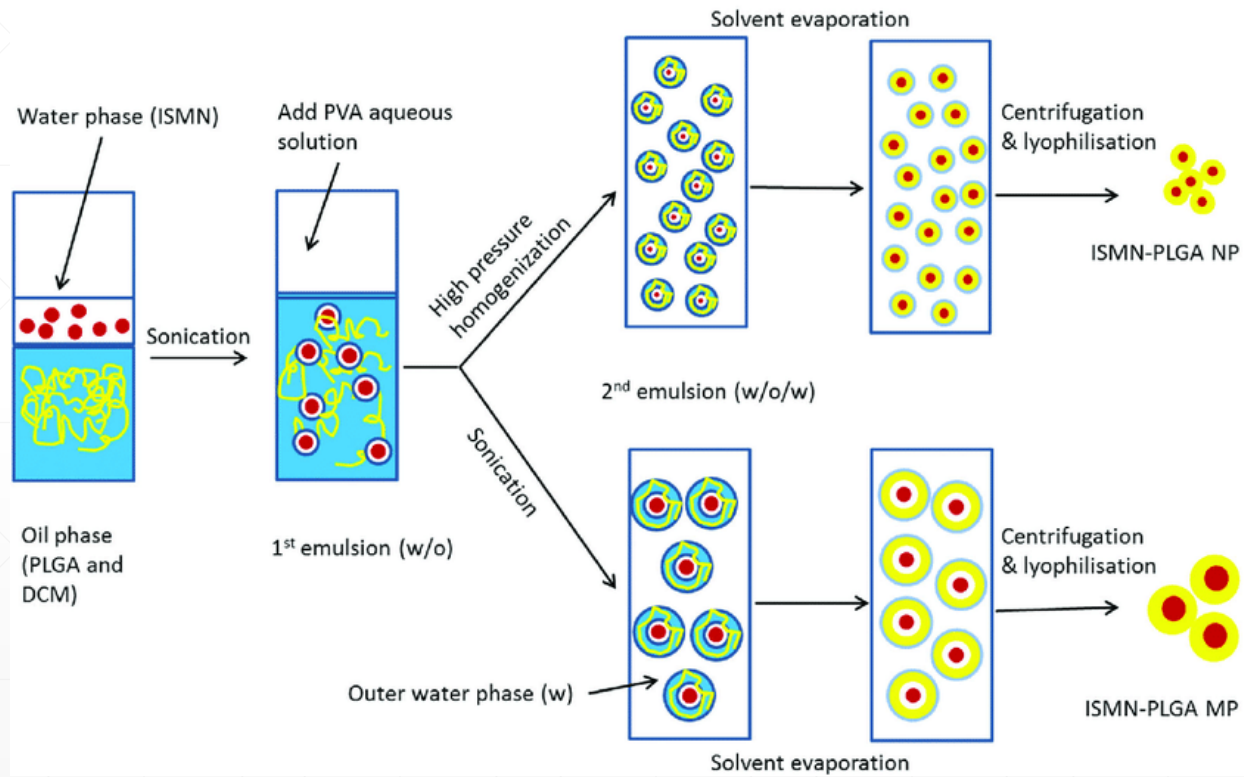
製備 Liposome / 微脂體 / 脂質體






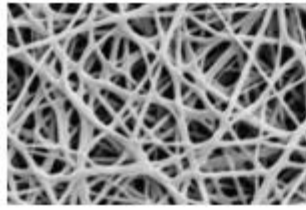

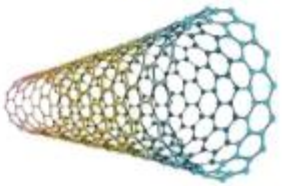
脂質體擠出器 Liposome Extruder



高壓製備 Liposome

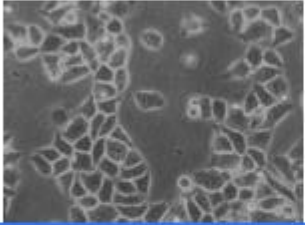




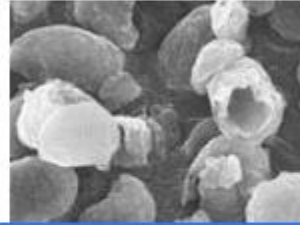


分散-Dispersions (製藥、材料、能源)

Dispersions	Pigments	Drugs/Creams	Battery	Particle aggregation	Graphene	Nanotubes
						
Sample	Inks, Coatings	Norfloxacin, Isoxyl	Lithium/Solar cell	Nano fibril	Graphene	Carbon Nanotubes
Pressure	~25,000psi	~20,000psi	~20,000psi	~25,000psi	~20,000psi	~20,000psi

Z type interaction chamber has better result

細胞破碎-Cell Disruption (生科、生技、生化)

Cells	Mammalian cell	Insect cell	Bacteria cell	Yeast cell	Algae cell	SPore
						
Sample	CHO Hela	Sf9 Sf21 H5	E. Coli	Yeast	Green algaea	Ganoderma
Pressure	600-800bar 8500-11500psi	600-1000bar 8500-14500psi	800-1000bar 11500-14500psi	1200-1400bar 17500-20000psi	1200-1500bar 7500-21500psi	1300-1600bar 18500-23000psi

Z type interaction chamber has better result

競爭者

- Avestin
- Constant
- DeBEE
- Microfluidics

高階品牌 (very expensive)



廠牌型號	Nano DeBEE 30-4	Microfluidics M110P
Capacity	4L/hr	7.2L/hr
Pressure	30Kpsi	30Kpsi
Min. Vol.	12mL w/ small vol. option	31mL
Dead Vol.	>> 2mL	>> 2mL
Auto stop by time/vol.	No	No

其化品牌



廠牌型號	Avestin EmulsiFlex-C3	Constant CF-1
Capacity	3L/hr	6L/hr
Pressure	30Kpsi	40Kpsi
Min. Vol.	10mL	20mL
Dead Vol.	<1mL ??	>2mL
Auto stop by time/vol.	No	No

感謝聆聽

台湾勝博國際集團 <https://www.sunpro.com.tw>

苏州微流纳米生物技术 <https://www.willnano.com>