

華安醫學

Energenesis
Biomedical



公司營運簡報

Energy Balance

2020/9/3

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Energenisis Biomedical AT A GLANCE



公司創立時間

2012

35

員工人數



6

Ph.Ds and

20

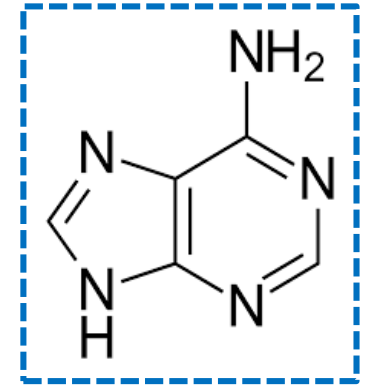
Masters



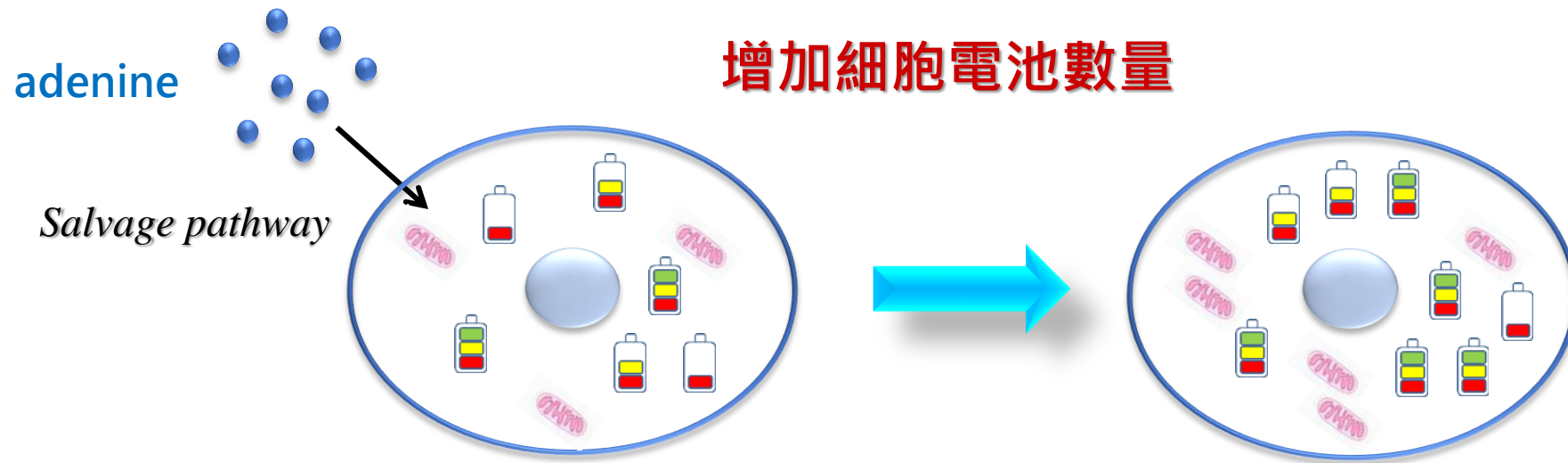
2018年8月8日 登錄興櫃

ENERGI platform - 全新治療機制

- ENERGI: 小分子藥物
- 全新藥理機制: 提升細胞能量 (ATP)

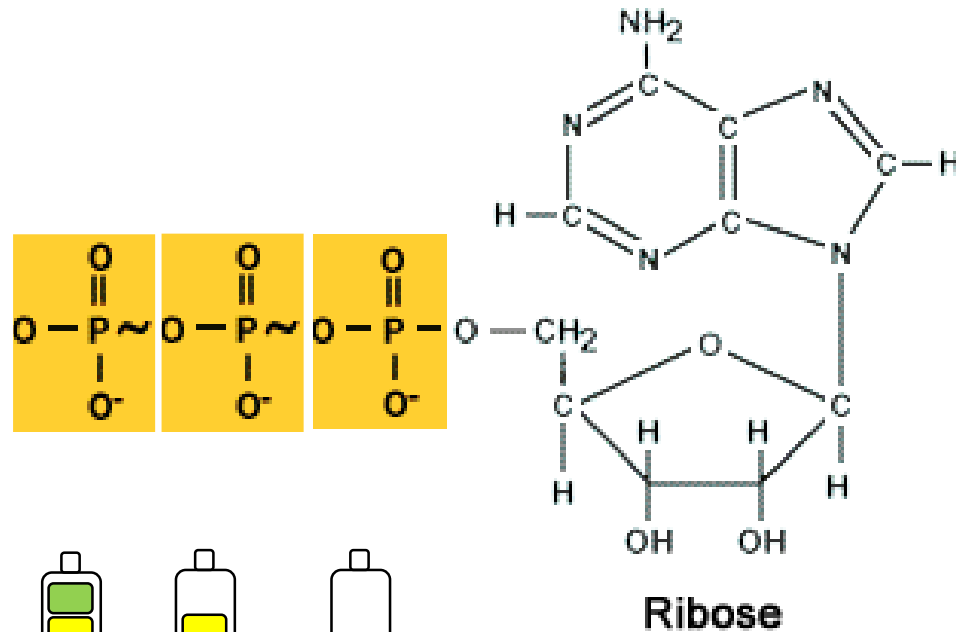


9H-purin-6-amine

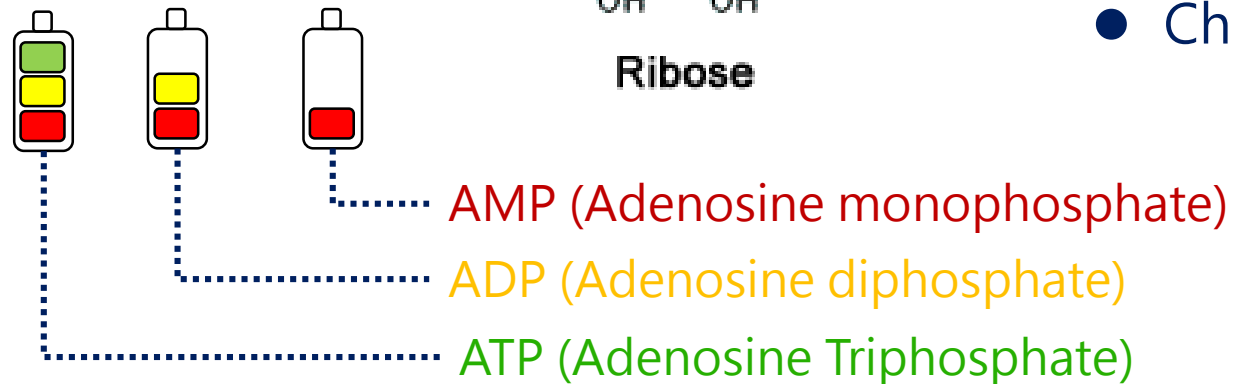


ATP 非外來物質，安全無疑慮，無副作用

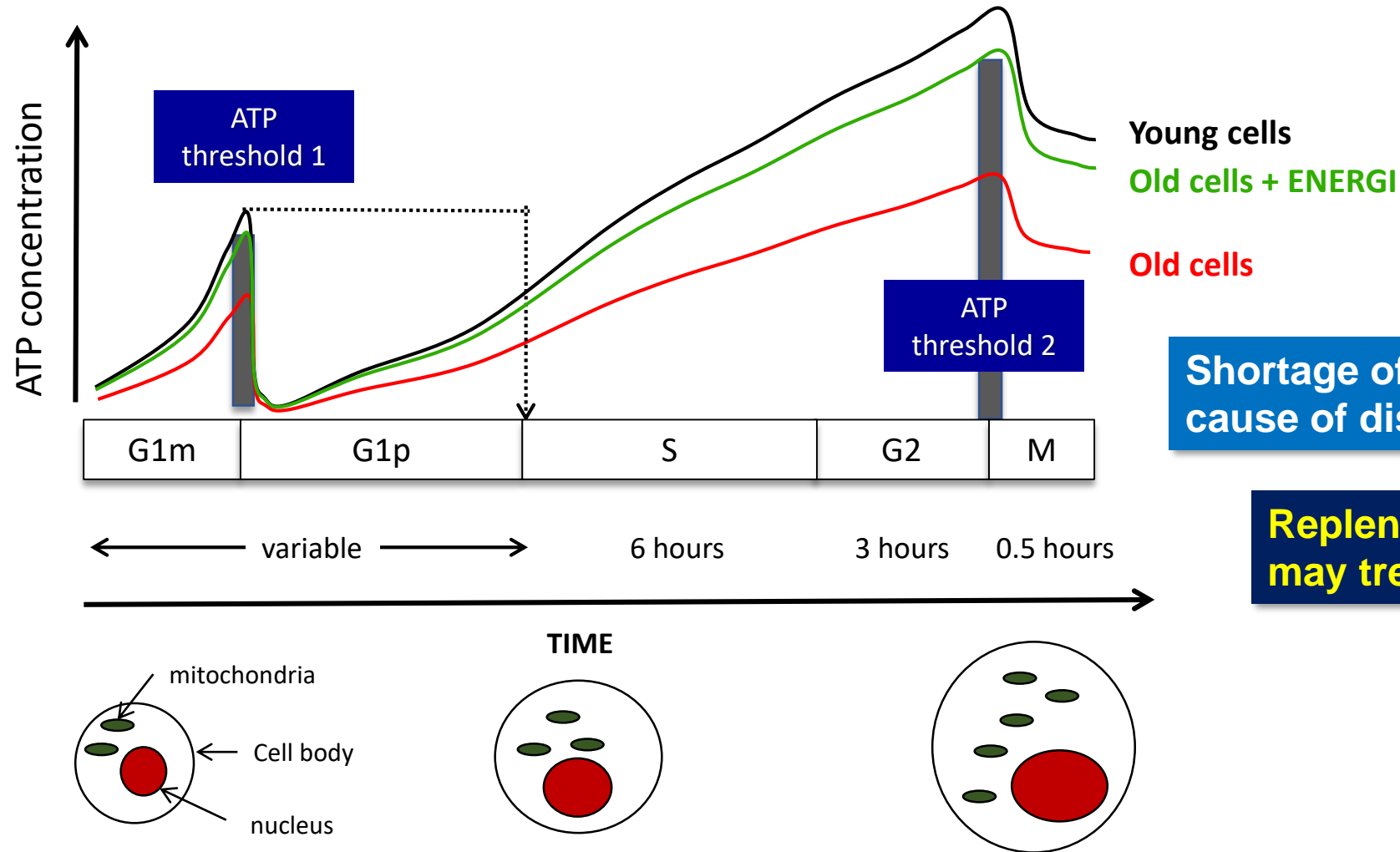
可提升紅血球內 ATP (CPDA blood bag)



- 5-10 mM in cells
- 2×10^{23} molecules in 65 kg human
- Highly charged
- Highly unstable
- Synthesis in cytosol
- Charged in mitochondria



ATP能使細胞正常運行

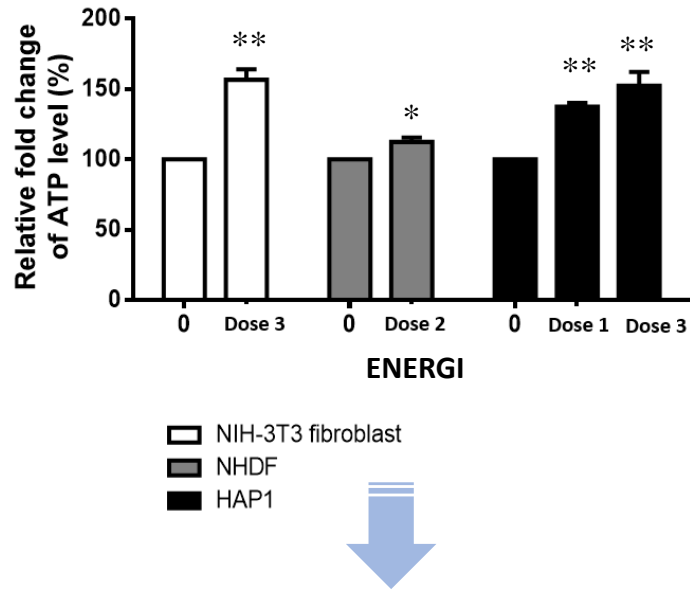


Shortage of ATP in cells as a cause of diseases

Replenish of ATP by ENERGI may treat certain diseases

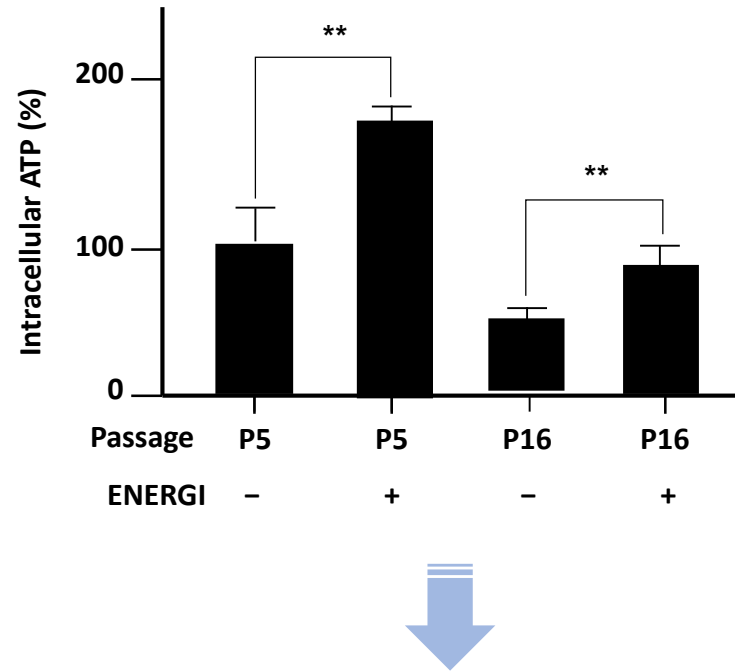
ENERGI能增加各種細胞中的ATP數量

Epithelial cells



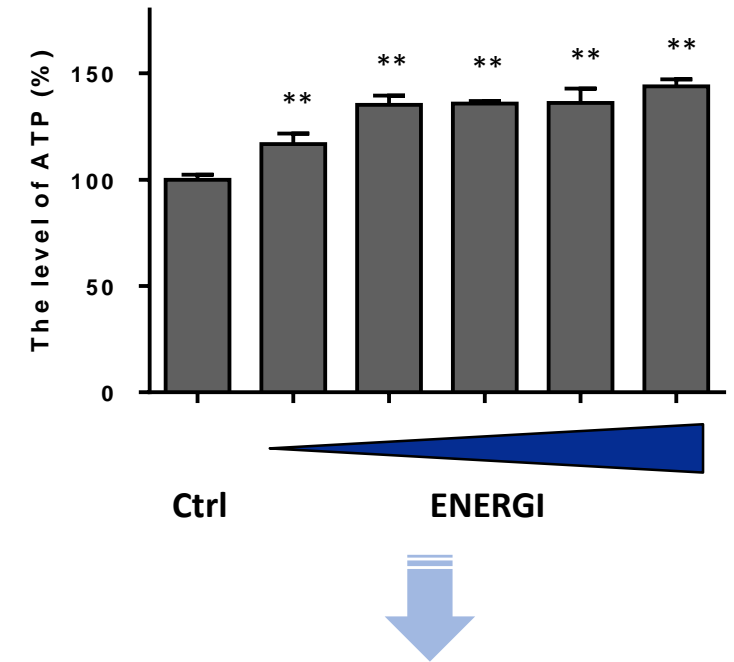
**Promote wound healing
(Diabetic foot ulcers)**

Hair follicle dermal papilla cells



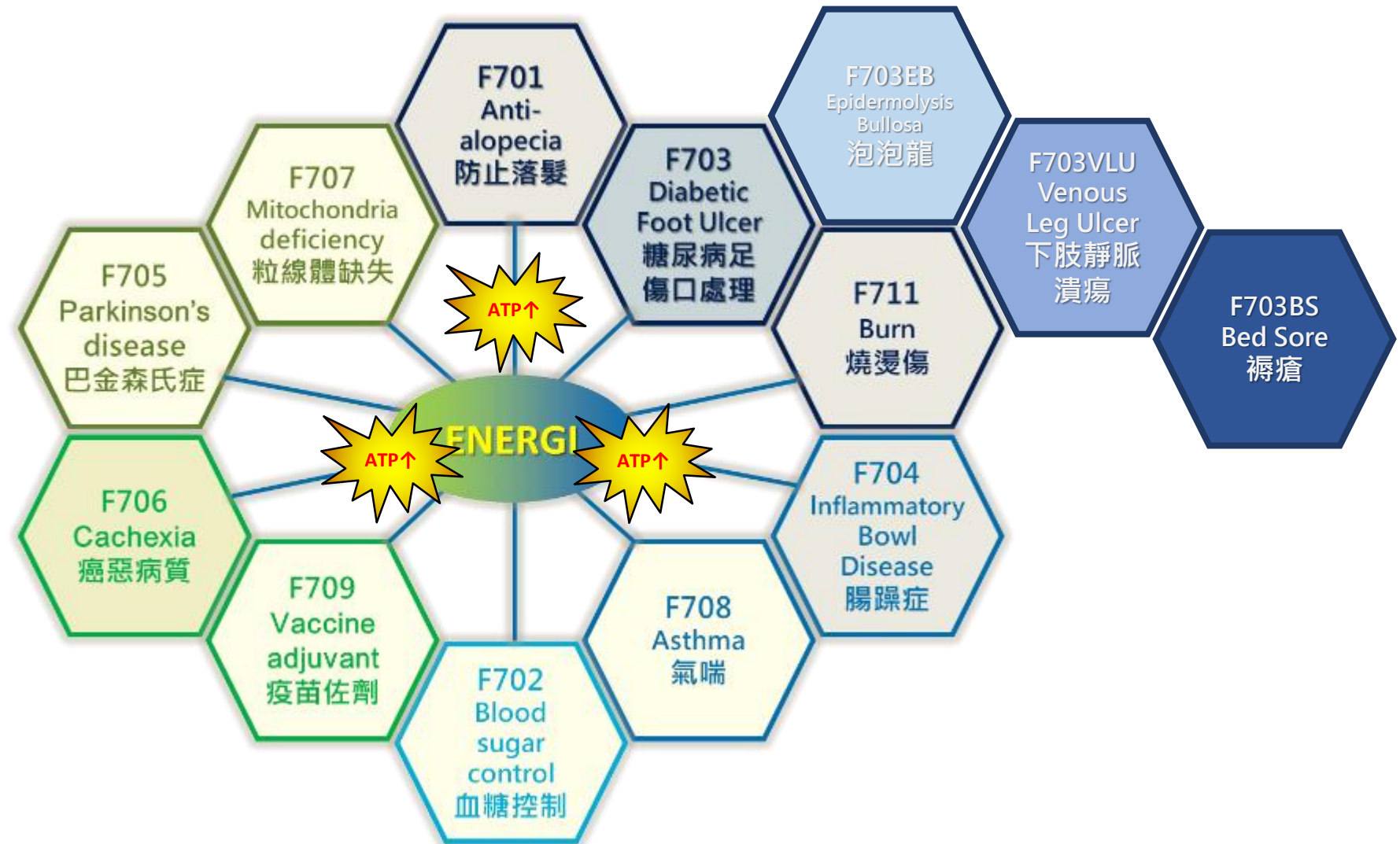
**Prevent hair loss
(Alopecia)**

Neural cells



**Neurodegenerative diseases
(Parkinson's disease)**

ENERGI 平台應用性廣泛



未被滿足的慢性傷口醫療需求



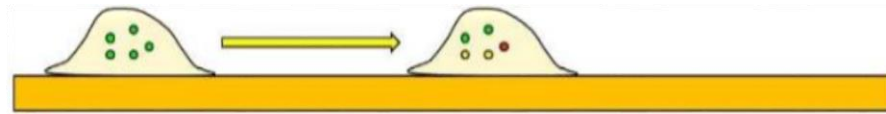
- 糖尿病患者15-20% 併發DFU
- 全球糖尿病足患者67,000,000人



- DFU 患者 33%會被截肢
- 截肢後五年死亡率超過 70%

最新慢性傷口癒合手段 – 提升細胞內 ATP

- Increase cellular ATP to accelerate epithelial cell migration and further promote skin repair

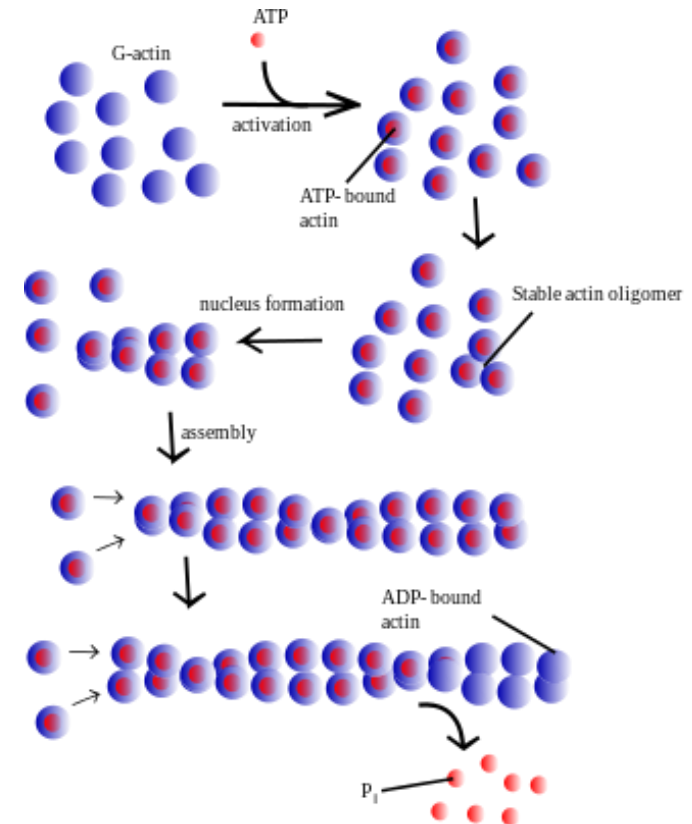


Low energy status (low ATP)
cell migrates slowly (skin repairs slowly)



High energy status (High ATP)
cell migrates fast (skin repairs fast)

- Actin is the cytoskeleton protein
- The arrangement of actin which is essential for cell migration is ATP dependent



目前糖尿病足潰瘍唯一用藥有安全疑慮

ENERGI-F703凝膠有潛力佔領DFU藥物市場

Regranex (Smith & Nephews)
the only FDA approved DFU drug



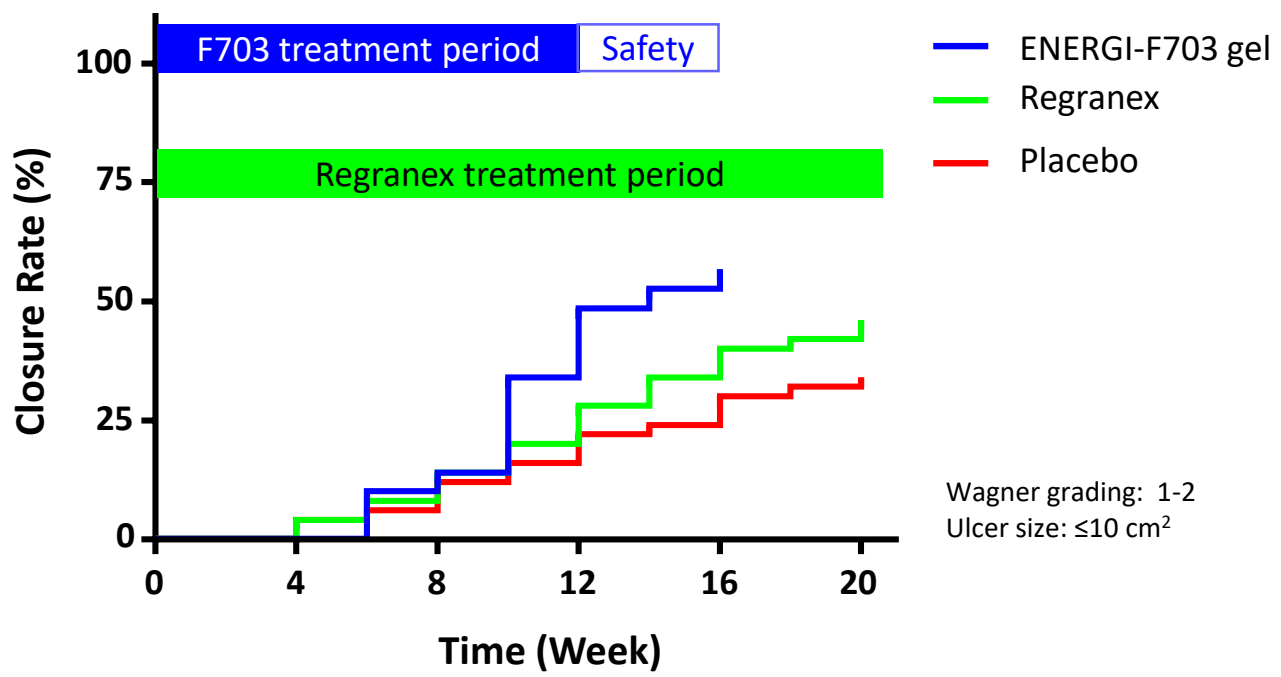
Market share
< 1%

- ✓ Contains human platelet-derived growth factor
- ✓ Increase the rate of re-epithelialization and revascularization

Problems

1. Storage in refrigerator
2. Expensive (US\$800/tube)
3. increase rate of death from cancer when three or more tubes are used*

ENERGI-F703 gel shows better efficacy than Regranex



ENERGI-F703 trial median ulcer size: 3.57 cm²
Regranex trial median ulcer size: 1.5 cm²

Source: www.smith-nephew.com/key-products/advanced-wound-management/regranex-becaplermin-gel/
*FDA had approved the removal of a safety warning on its treatment for lower extremity diabetic neuropathic ulcers in December 2018.

CODE	INDICATIONS	Discovery 藥物探索	Lead opt. 最適化	Pre-clinical 臨床前開發	Phase 1 臨床一期	Phase 2 臨床二期	Phase 3 臨床三期	NDA 查驗登記	Market 新藥上市
DERMATOLOGY DISEASES - 皮膚關 疾病									
F703	Diabetic foot ulcer treatments (gel) 糖尿病足部潰瘍外用凝膠								
F701	Alopecia treatments (tonic) 防止落髮外用液劑								
F703VLU	Venous leg ulcers treatment (gel) 下肢靜脈潰瘍外用凝膠								
F703EB	Epidermolysis Bullosa (cream) 遺傳性表皮鬆解性水皰症霜								
F711	Burn treatments (cream) 燒燙傷用藥								
MITOCHONDRIA DEFICIENCY - 粒線體關 疾病									
F705	Parkinson's disease 帕金森氏症								
F707	Mitochondria deficiency treatments 粒線體缺失疾病								
METABOLIC SYNDROMES - 新陳代謝疾病									
F702	Diabetes control 第二型糖尿病降血糖口服藥								
INFLAMMATION RELATED - 發炎關 疾病									
F704	inflammatory bowel disease 腸躁症								
F708	Asthma treatments 氣喘病								
OTHERS - 其他									
F706	Cachexia treatments 癌惡病質用藥								
F709	Vaccine adjuvants 疫苗佐劑								

異常性落髮核准藥物皆有副作用



落建 (minoxidil)

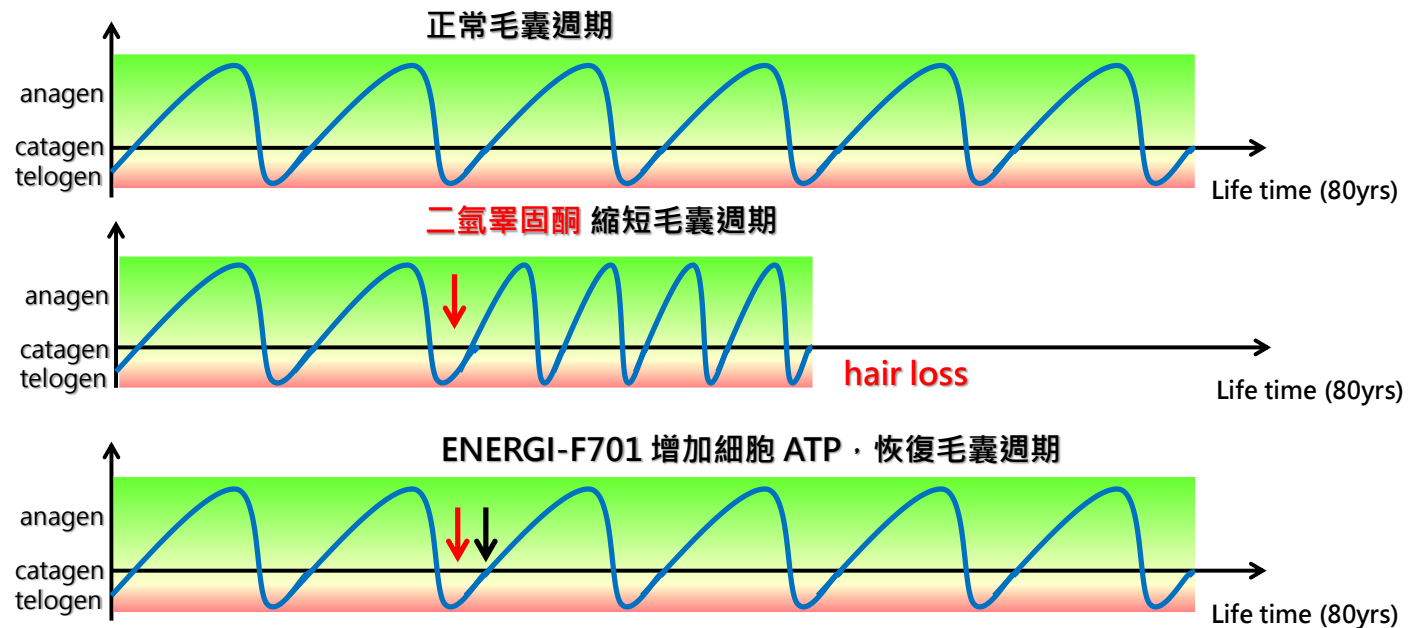
- ✓ 促生新髮
- X 防止落髮
- X 初期使用會顯著落髮且須終生使用!



柔沛 (finasteride)

- X 促生新髮
- ✓ 防止落髮
- X 影響性功能!

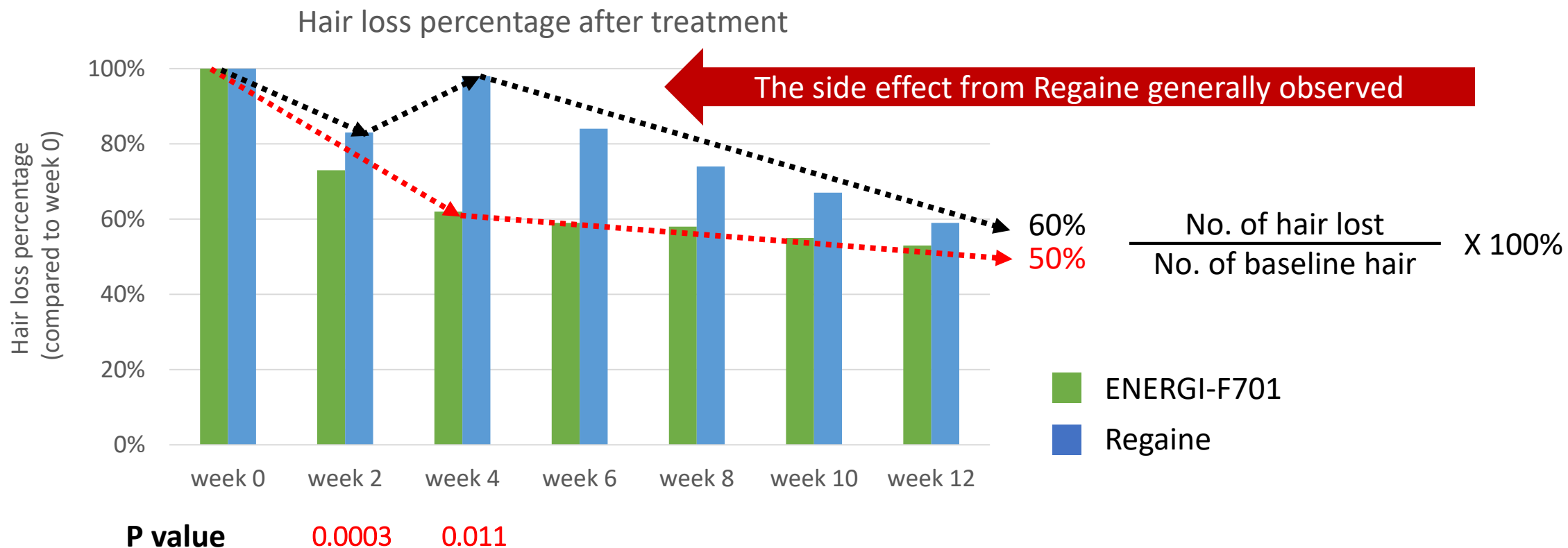
ENERGI-F701 tonic 唯一利用增加 ATP 為機制的防止落髮藥品



直接授權醫美 OTC 商化

ENERGI較REGAINS更有效及快速減少落髮

- The hair loss percentage compared to week 0 (100%)
- **ENERGI-F701** reached 60% hair loss at week 4 ; **Regaine** reached 60% hair loss at week 12
- Fast effectiveness was observed at week 4 with a significant difference compared with Regaine



ENERGI可防止神經元細胞中的蛋白質聚集

Science. 2017 May 19;356(6339):753-756.

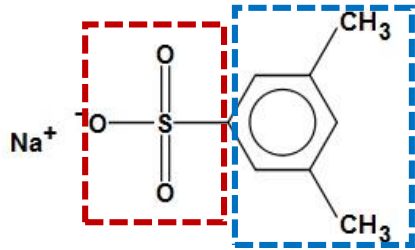
ATP as a biological hydrotrope.

Patel A¹, Malinovska L¹, Saha S¹, Wang J¹, Alberti S¹, Krishnan Y², Hyman AA

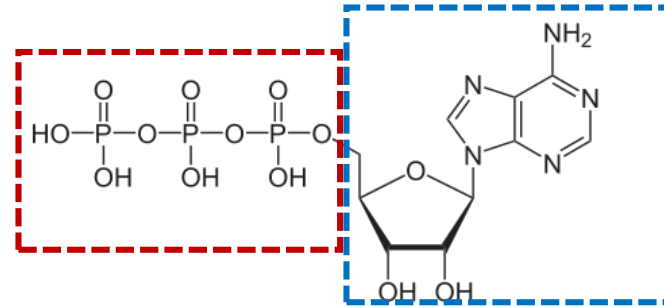
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2. Department of Chemistry and Grossman Institute for Neuroscience, Quant
IL 60637, USA. yamuna@uchicago.edu hyman@mpi-cbg.de.

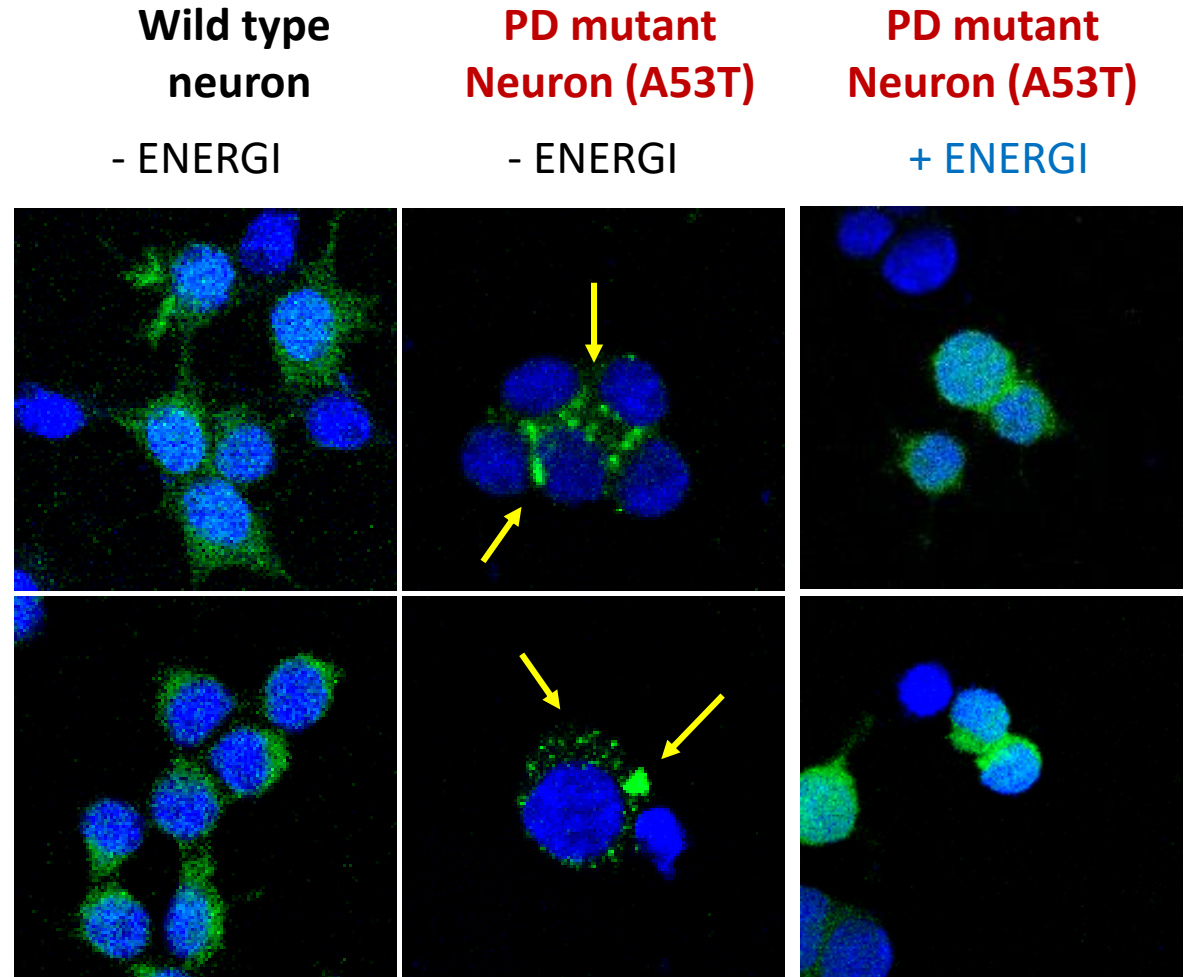
3. Max Planck Institute of Molecular Cell Biology and Genetics, 01307 Dresde



sodium xylene sulfonate



ATP (adenosine triphosphate)



Yellow arrows: α -synuclein protein aggregation

ENERGI可維持運動神經元的完整性 並恢復PD模型小鼠的行為

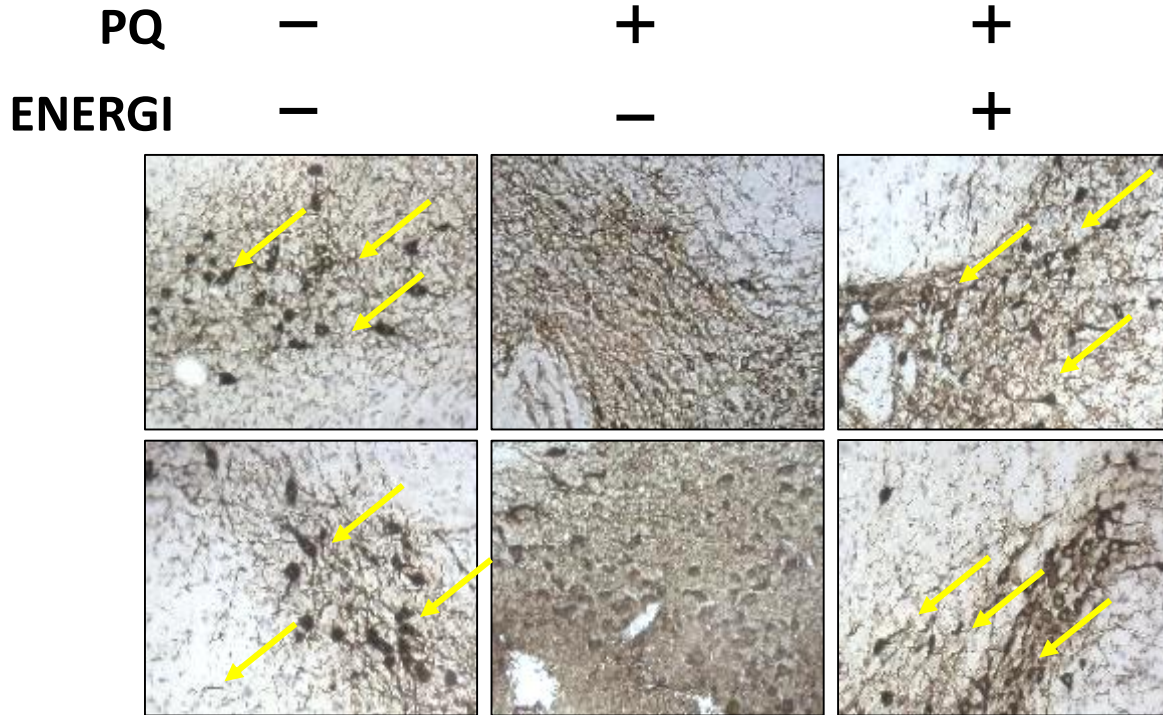


Fig. The effect of ENERGI-F705 on the expression of tyrosine hydroxylase in the substantia nigra of the Paraquat (PQ) -treated C57BL/6 mouse.

Challenging beam transversal

PQ
treated

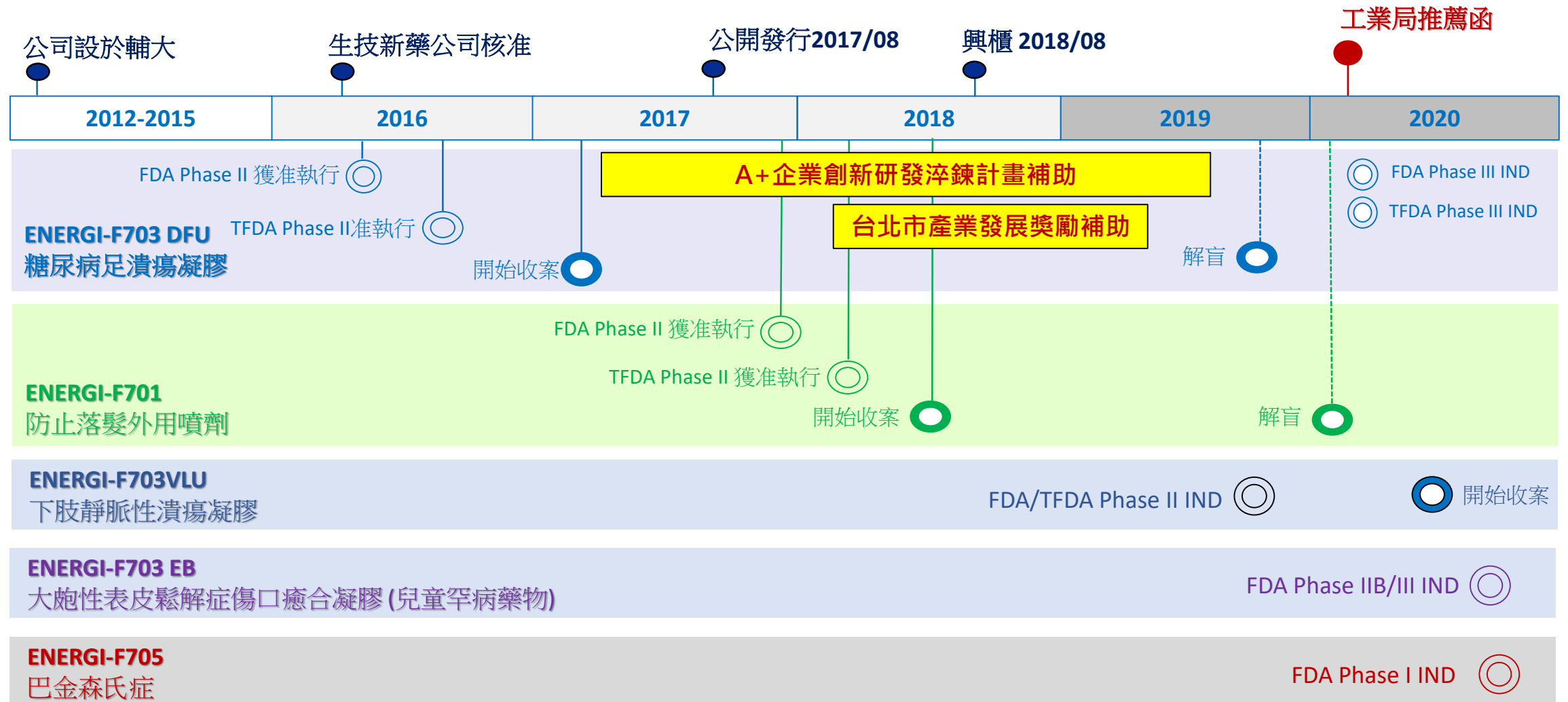


PQ
Treated
+
ENERGI



華安沿革與短期規劃

額定資本額: 10 億
實收資本額: 5.86 億





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- PostDoc, University of S. California
- PhD, National Taiwan University
- Director of the Biophotons Center and deputy dean of the College of Science



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VP & Director of the General Administrative Division

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- IPO division of Taiwan International Securities, the financial division of Action Electronics and Good Way Technology, and the equity investment division of Fuyi International Group



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*Healing requires energy,
here we provide.*

