



eva
therapeutics, inc.

株式会社EVAセラピューティクス

eva therapeutics, inc.

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Combination of Young & Talented Researchers and Experienced Industry Veterans



**Takanori Takebe, MD, Ph.D. :
Founder**



**Hiromu Ozaki : Chief
Executive Officer**



**Hirofumi Nagai, DVM, Ph.D.,
DJSTP : CTO**



**Kazunori Sato, RPh : Head of
Regulatory and CMC**

Company	EVA Therapeutics, Inc.
Head Quarters	Chotokuji Bldg. 1F 1-4-6, Doushin Kita-ku, Osaka 530-0035 Japan
Director of Board	Hiromu Ozaki

VISION

Unlock New Potential of the Gut

MISSION

Deliver Enteral Ventilation (EVA) Therapy

PASSION

Help People, Care for Patients, Cure Diseases

Unmet medical needs

- ✓ For severe respiratory failure, the mechanical ventilator and extracorporeal membrane oxygenation (ECMO) are commonly utilized at ICU setting. Given such treatment is highly invasive, there is an urgent need to develop a simpler treatment to prevent the acute exacerbation of respiratory failure and the potential transition to invasive ventilator and ECMO

Opportunity

- ✓ High Needs for medical device for the treatment of Acute Respiratory Distress Syndrome (ARDS) due to ever increasing infection cases of COVID-19
- ✓ By using perfluorocarbon (currently in clinical use as a medicine or a medical device) as the base material for our Enteral Ventilation product, the development timeline could be significantly shortened

R&D strategy

- ✓ Non-clinical studies can piggyback on the data from commercially available perfluorocarbon products including Fluosol (Artificial Blood product using Intravascular Perfluorochemical Emulsion) FDA SBA package
- ✓ Regulatory Submission in Japan can be achieved in a relatively short period of time through a small scale clinical trial

Market Potential

- ✓ Japan USD 100-200 million
- ✓ US&EU5 USD 1-2 billion

✓ g-EVA has systemic oxygenation effects and thus has therapeutic benefit

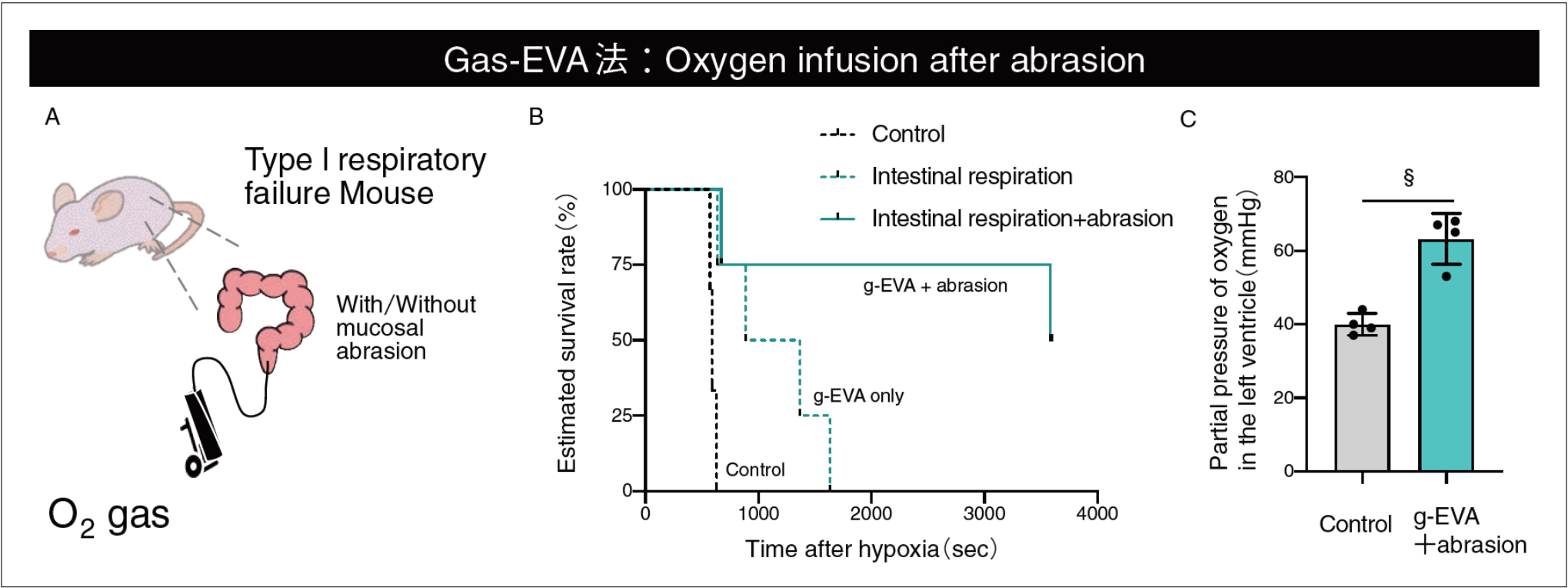


図1 Gas-EVA (enteral ventilation via anus) 法の確立

A：Gas-EVA 法の実験，B：低酸素環境下における呼吸不全に対し gas-EVA 法を用いた時の生存率，C：低酸素環境下における呼吸不全に対し gas-EVA 法を用いた時の動脈血酸素分圧の改善。

O₂ loaded PFC-based EVA rescues lethal hypoxia with intact gut

- ✓ I-EVA systemically and repeatedly oxygenates in porcine & mouse model of hypoxia
- ✓ Confirmed proof of concept of I-EVA for human use

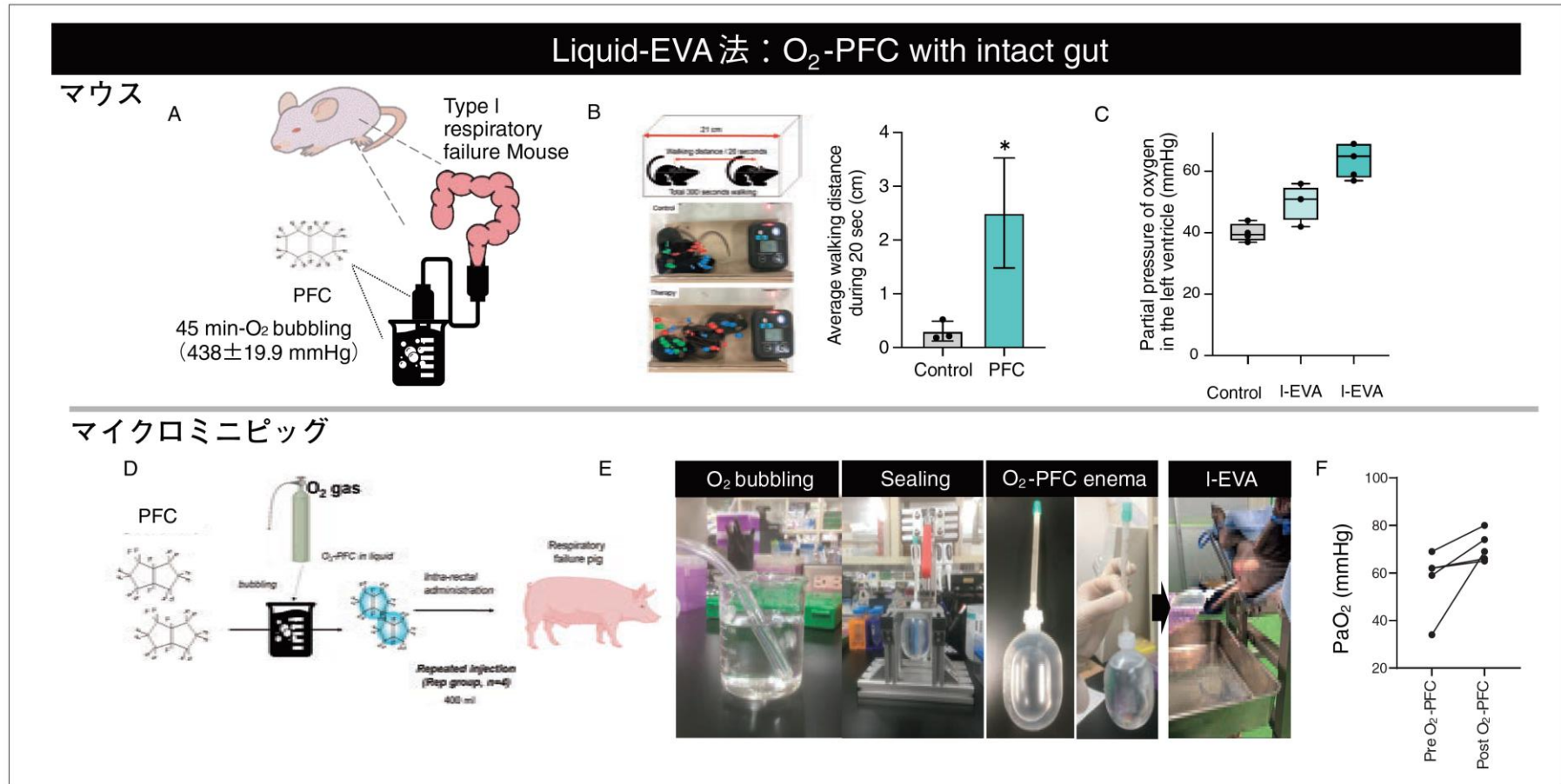
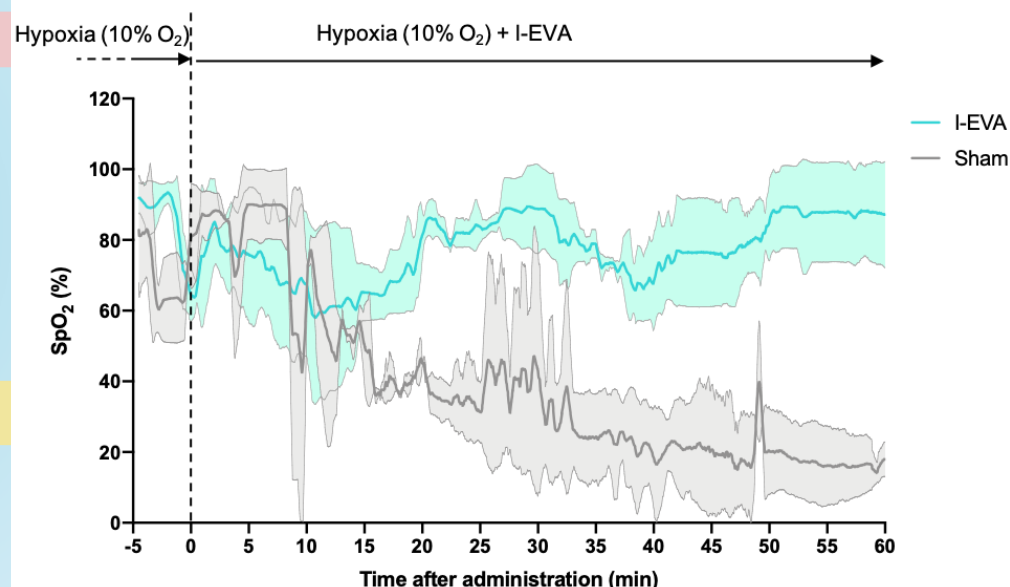
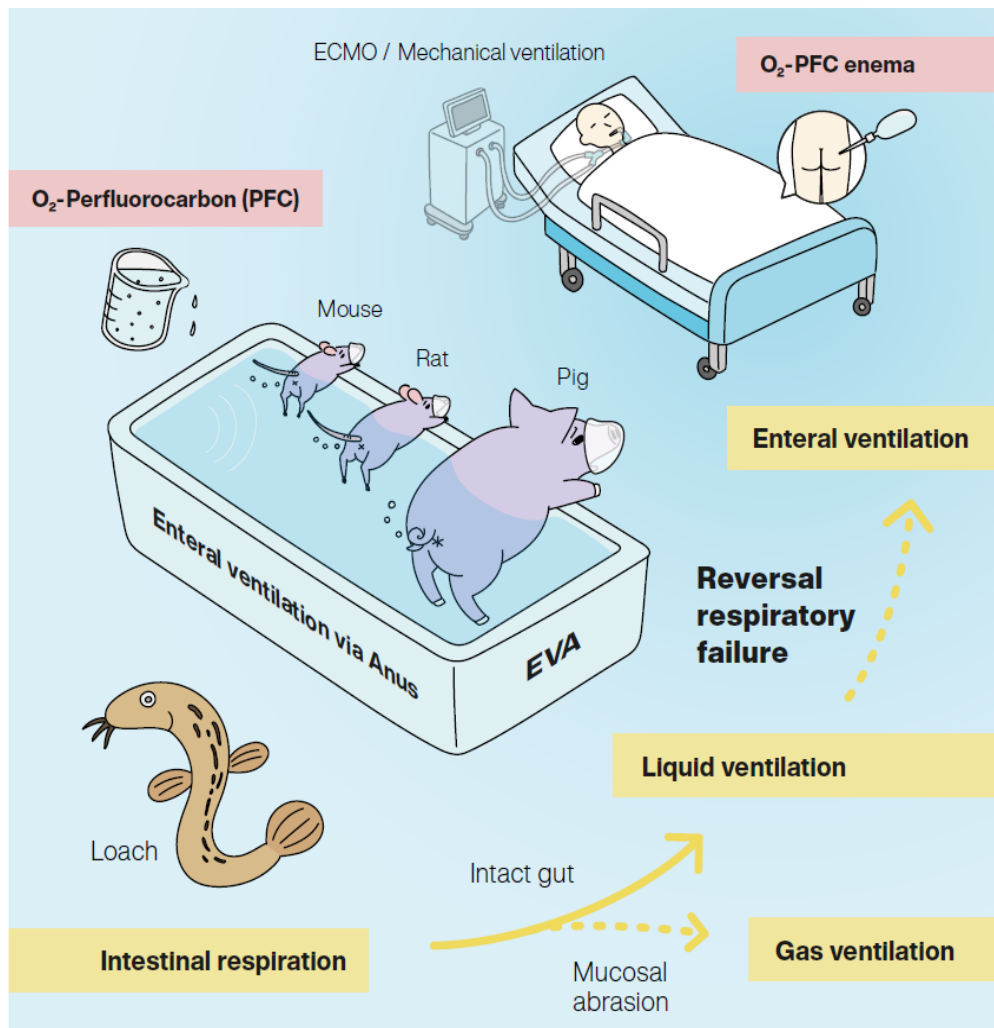


図2 Liquid-EVA (enteral ventilation via anus) 法の確立

A: マウスにおける liquid-EVA 法の実験, B: 低酸素環境下における呼吸不全に対して liquid-EVA 法を用いた時の行動変容や歩行距離の改善, C: 低酸素環境下における呼吸不全に対して liquid-EVA 法を用いた時の動脈血酸素分圧の改善, D: マイクロミニピッグにおける liquid-EVA 法の実験, E: 実際の PFC の直腸投与方法, F: 低換気による呼吸不全に対して liquid-EVA 法を用いた時の動脈血酸素分圧の改善.

Concept of Enteral Ventilation for human clinical use

- ✓ Due to the proven safety of perfluorochemicals in clinics, EVA potentially provides an adjunctive means of oxygenation for patients under respiratory distress conditions.

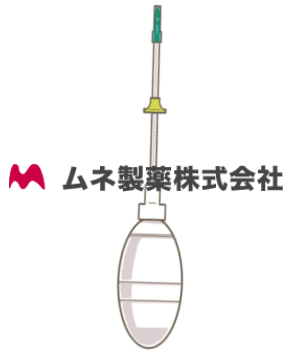


The exploitation of intestinal breathing phenomenon in mammalian pre-clinical models, potentially offering an additional route of O₂ administration to patients who are in critical need of immediate respiratory support.

Product and System

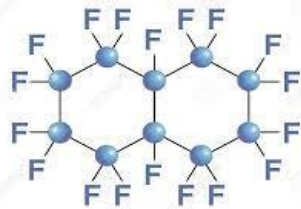
Oxygenated PFD for Intestinal Administration

System and Device



**Plastic Container
Injection Nozzle**

GMP grade Perfluorocarbon



Perfluorodecalin

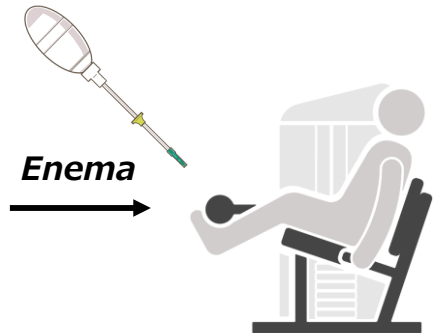
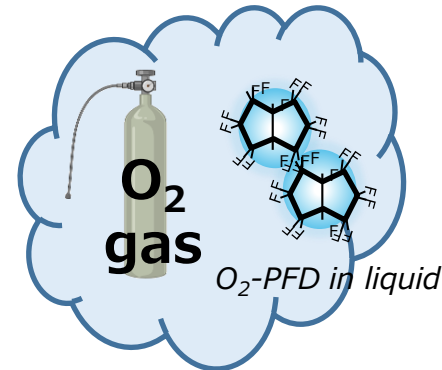
PFD(perfluorodecalin)

Devices such as catheter, filter, syringe, etc.

Protocols for Oxygenation, Administration
and Waste Disposal

Clinical Practice

Oxygenation at site

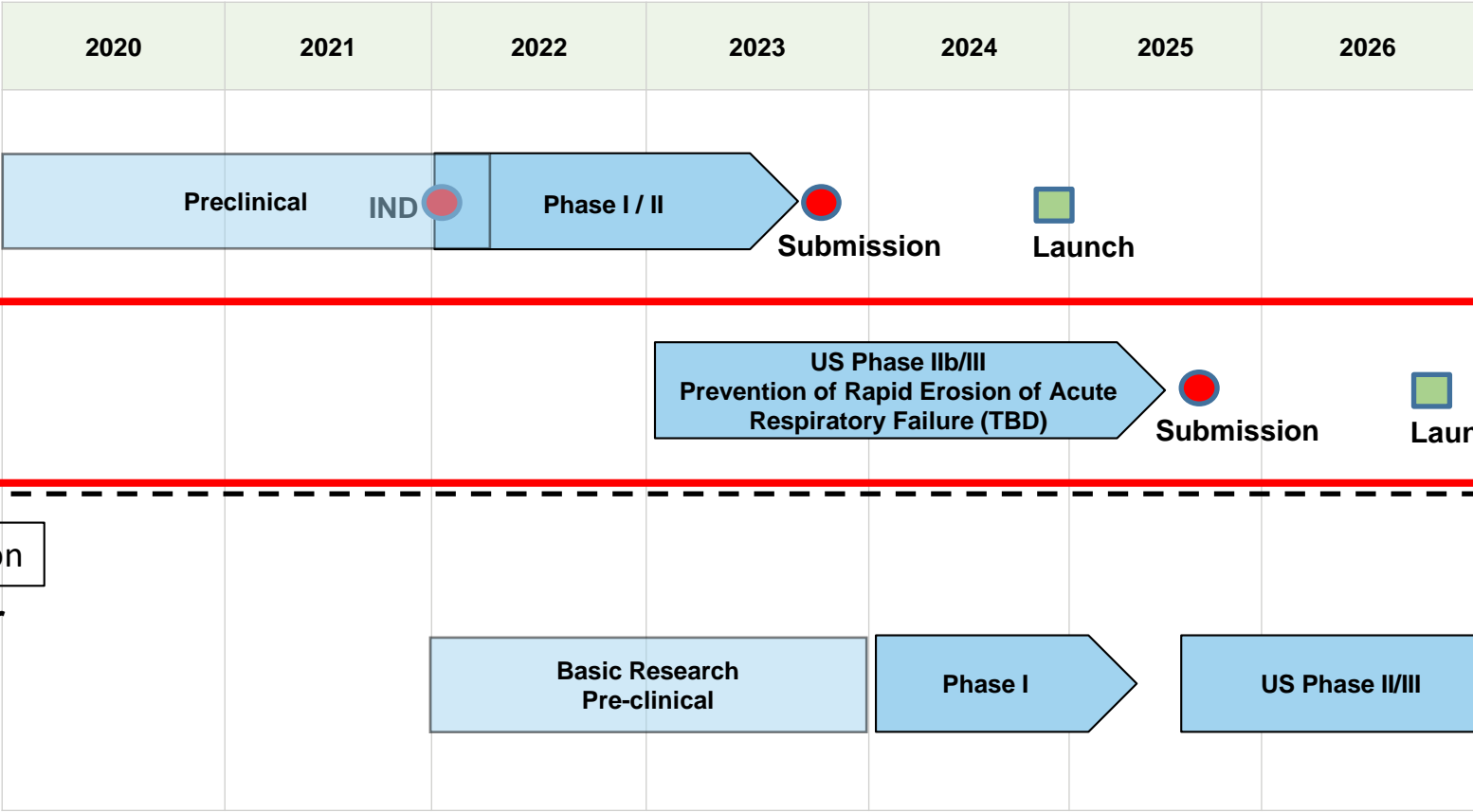


Enema

EVA Clinical Development Timeline

医療機器

EVA101

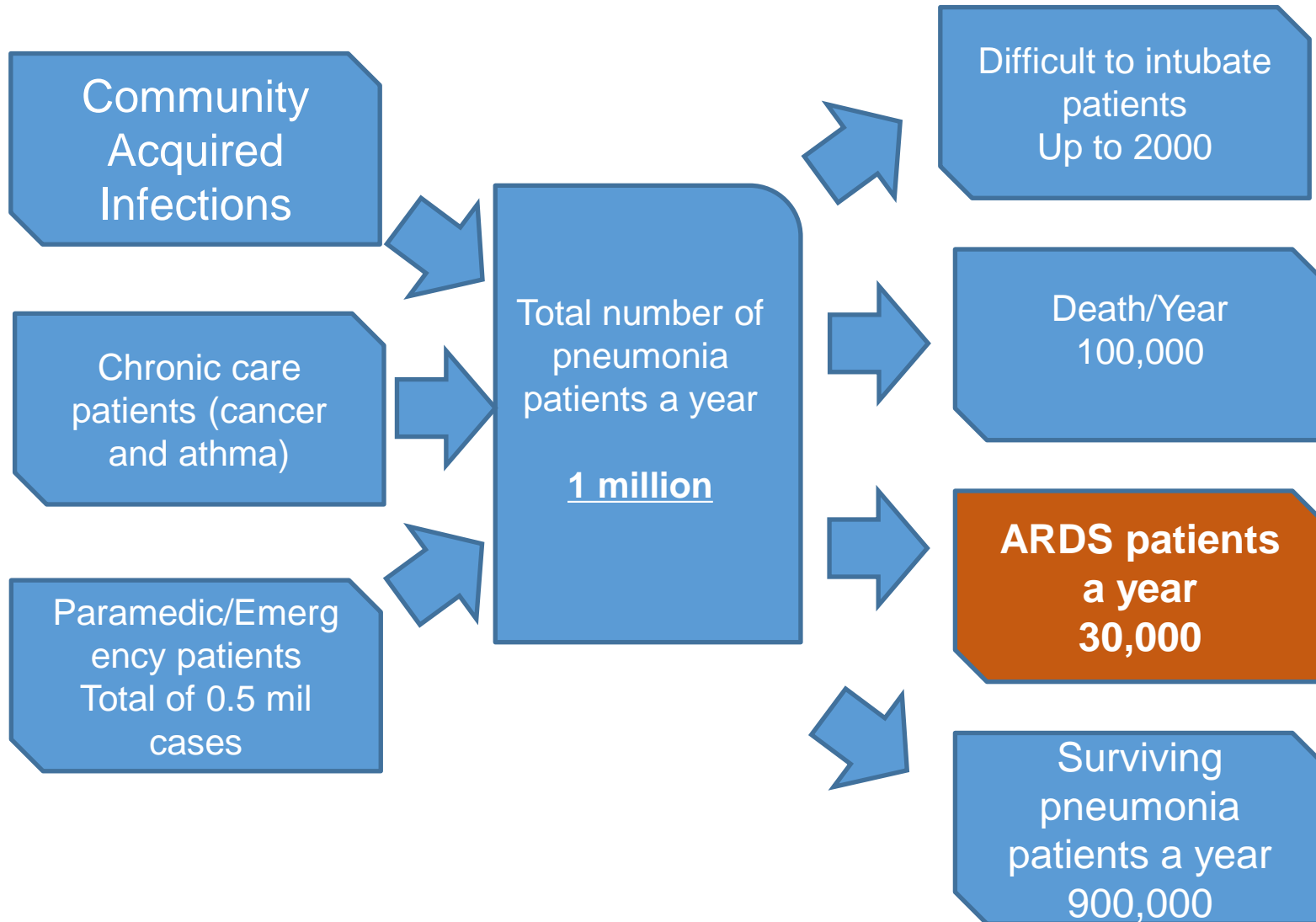


New Formulation

EVA201 or
EVA301



Potential Patients in Japan for Liquid Ventilation Treatment



- EVA Therapeutics, Inc. will develop and commercialize Enteral Ventilation Technology using perfluorocarbon.
- The intra-rectal delivery of a liquid form of O₂ (oxygen) with perfluorocarbon is very well tolerated. Perfluorocarbon is a compound well-established for use in clinics for liquid ventilation through airway administration.
- Balanced team of industry veterans and young researchers at Takebe Lab.
- FPI is expected in 2022