

# ONO's History Timeline

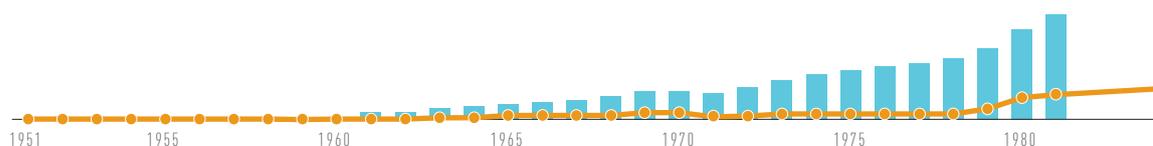
## A 300-Plus-Year History of Full Commitment to the Pharmaceutical Business

Since our foundation in 1717, we have made progress for more than 300 years in our commitment to relieving pain of patients and focus on their health improvement.

“We believe there are new drugs that only we can develop.”

We still continue to unite our efforts in meeting the challenge of discovering our own innovative drugs.

\* Only for FY1989 (ended on March 31, 1990), the financial results are for four months from December 1, 1989 to March 31, 1990.



### Foundation

## 1717

Ichibei Fushimiya I founded the apothecary “Fushimiya Ichibei Shoten” in Doshomachi, Osaka.



Illustration of the Fushimiya Ichibei shop  
Source: Osaka guidebook “Naniwa Hitori Annai,” 1867

## 1934

Ichibei Ono VIII changed the name of the business from Fushimiya Ichibei, which had been used since its foundation, to Ono Ichibei Shoten (Ono-Ichi) and reorganized operations to modernize management.



Ichibei Ono VIII

## 1947

Ono Pharmaceutical Co., Ltd. was established to grow into a pharmaceutical manufacturer dedicated to developing ethical pharmaceuticals.



(Original headquarters building and surrounding Doshomachi 2-chome area)

### Shift in Marketing from OTC Drugs to Prescription Drugs

## 1960's

Transformed to a prescription drug manufacturer

#### Tackling Impossible Challenge: The Road to Launching PG Drugs on the Market

After the World War II, ONO made a full-fledged entry into the OTC drug market. With the economy fluctuating and a universal health insurance system introduced in 1961, however, the OTC drug market environment became increasingly severe. Under such circumstances, prostaglandins (PGs) came to ONO's knowledge through the special lecture of Professor Sune K. Bergström of Sweden's Lund University in 1965, when ONO was still a small company with 20 researchers. With little development experience of prescription drugs. However, ONO started research on the then unidentified compounds.

No method for the chemical synthesis of PGs had yet been established, and the only method available was biosynthesis, requiring a considerable amount of effort to produce even small quantities. Following the success by Professor Elias J. Corey of the US's Harvard University in total chemical synthesis of PGs, ONO immediately sent its researchers to the professor to have them learn about the method. Finally, in 1968, ONO succeeded in the total chemical synthesis of PGs on a commercial basis for the first time in the world.

## 1968

**World's First**

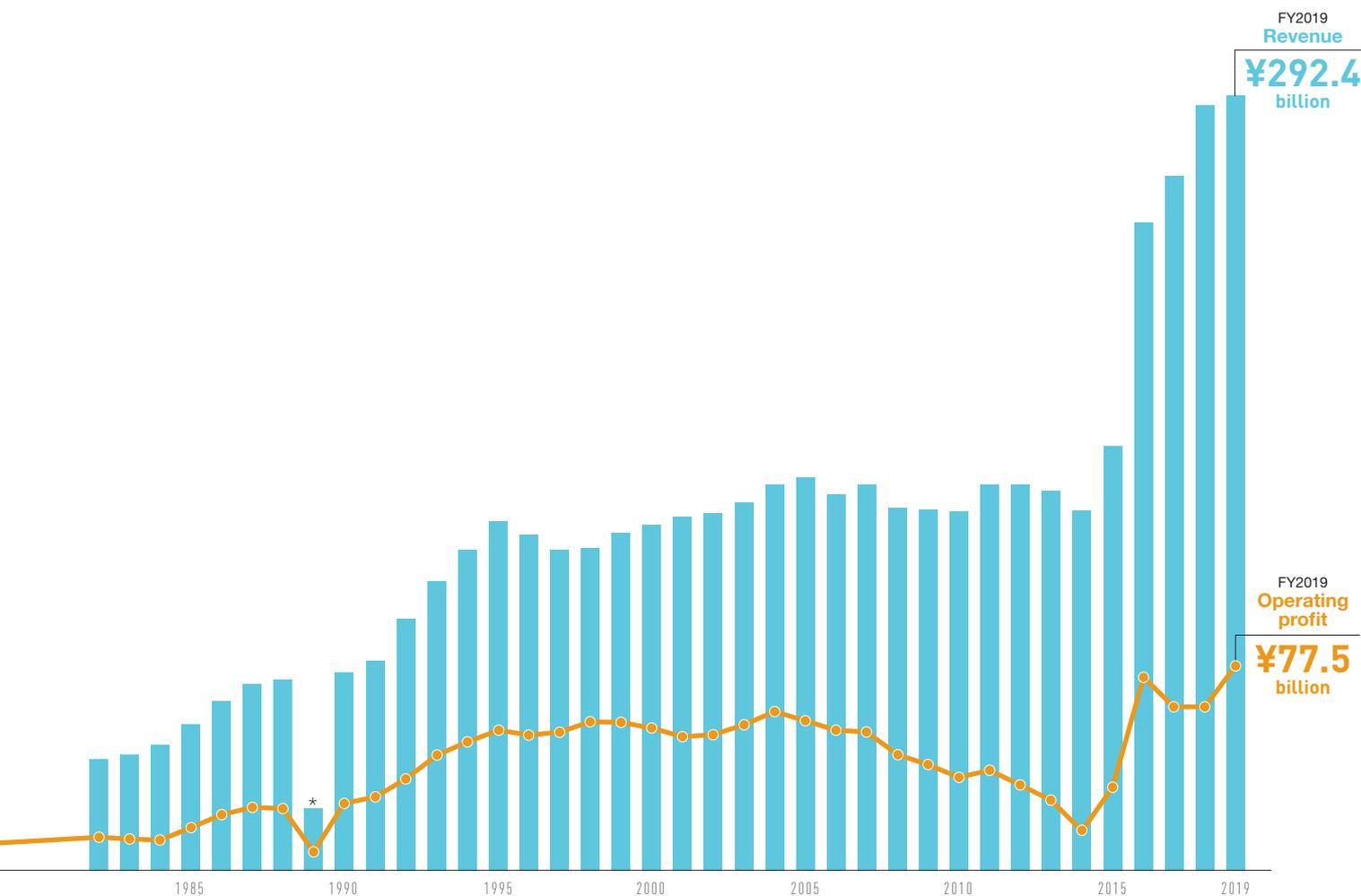
Became the world's first company to succeed in the total chemical synthesis of prostaglandins

**“To put it exaggeratedly, I feel like Columbus sailing on the Santa Maria westward across the Atlantic Ocean in search of the New World.”**

Excerpted from Yuzo Ono's remarks at the first PG Study Meeting



Yuzo Ono standing with his back against the stone monument on which ONO's corporate philosophy is engraved



**Strengthening Licensing Activities** | **Entering Oncology Domain**

### 1970's to 1980's

Successfully developed and launched new innovative drugs on the market



### 1990's

Strengthened licensing activities, promoting global open innovation

### 2010's

Made a full-fledged entry into the oncology domain

### 2014 World's First

Launched anti-PD-1 antibody OPDIVO for the first time in the world



### A Game-Changing Approach: 20 Years of OPDIVO Research

The cancer immunotherapy OPDIVO, drug launched on the market in 2014, was developed from globally innovative drug discovery based on ONO's 20-year research collaboration with the Honjo laboratory of Kyoto University.

In 1992, PD-1 was discovered at Kyoto University but its functions had long been unknown. It was in 2002, 10 years after the identification of PD-1, that the researchers found it plays a role in cancer immune evasion mechanism.

At first, however, healthcare professionals were suspicious and did not quickly accept the unprecedented concept of treating cancer by boosting the immune system. Nevertheless, the researchers persistently kept persuading healthcare professionals, believing in the potential of anti-PD-1 antibody. Their efforts led to understanding and cooperation from healthcare professionals, who started reporting cases one by one where the drug worked significantly effectively.

In July 2014, when 22 years passed since the discovery of PD-1, ONO obtained marketing approval for OPDIVO for the first time in the world and in September of the same year launched the drug on the market. OPDIVO offers a new treatment option to healthcare professionals as well as patients for which traditional treatments have little therapeutic effect.