

Asahi Kasei Pharma Corporation

Corporate Overview

November, 2017

Tokyo, Japan

Asahi Kasei Corporation Snapshot

Establishment	May 21, 1931
President	Hideki Kobori
Net Sales	\$17.4 billion (1,883.0 billion yen) (FY 2016)
Operating Income	\$1.47 billion (159.2 billion yen) (FY 2016)
Employees	33,720 (consolidated, as of March 31, 2017)



1 USD = 108 JPY

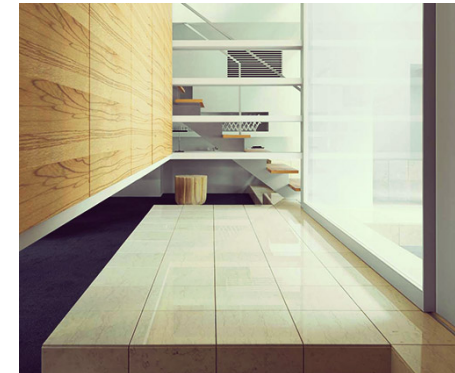
Main Business Sectors



Health Care



Material



Homes

Asahi Kasei Net Sales by Business Sector

(April 2016 - March 2017)

Asahi Kasei Corporation

Net Sales \$17.4 billion (1,883 billion yen) (FY 2016)

Health Care

\$2.5 billion (14%)

- **Asahi Kasei Pharma Corporation**
- Asahi Kasei Medical Co., Ltd.
- ZOLL Medical Corporation

Material

\$9.0 billion (52%)

- Asahi Kasei Corporation (operating function)
- Asahi Kasei Microdevices Corporation

Homes

\$5.7 billion (33%)

- Asahi Kasei Homes Corporation
- Asahi Kasei Construction Materials Corporation

1 USD = 108 JPY

Asahi Kasei Health Care Companies



Asahi Kasei Pharma

- Prescription Drugs
- Diagnostic Products

Asahi Kasei Medical

- Hemodialysis (artificial kidney)
- Therapeutic Apheresis
- Bioprocess (Planova™ virus removal filtration)
- Transfusion (Sepacell™ leukocyte reduction filtration)

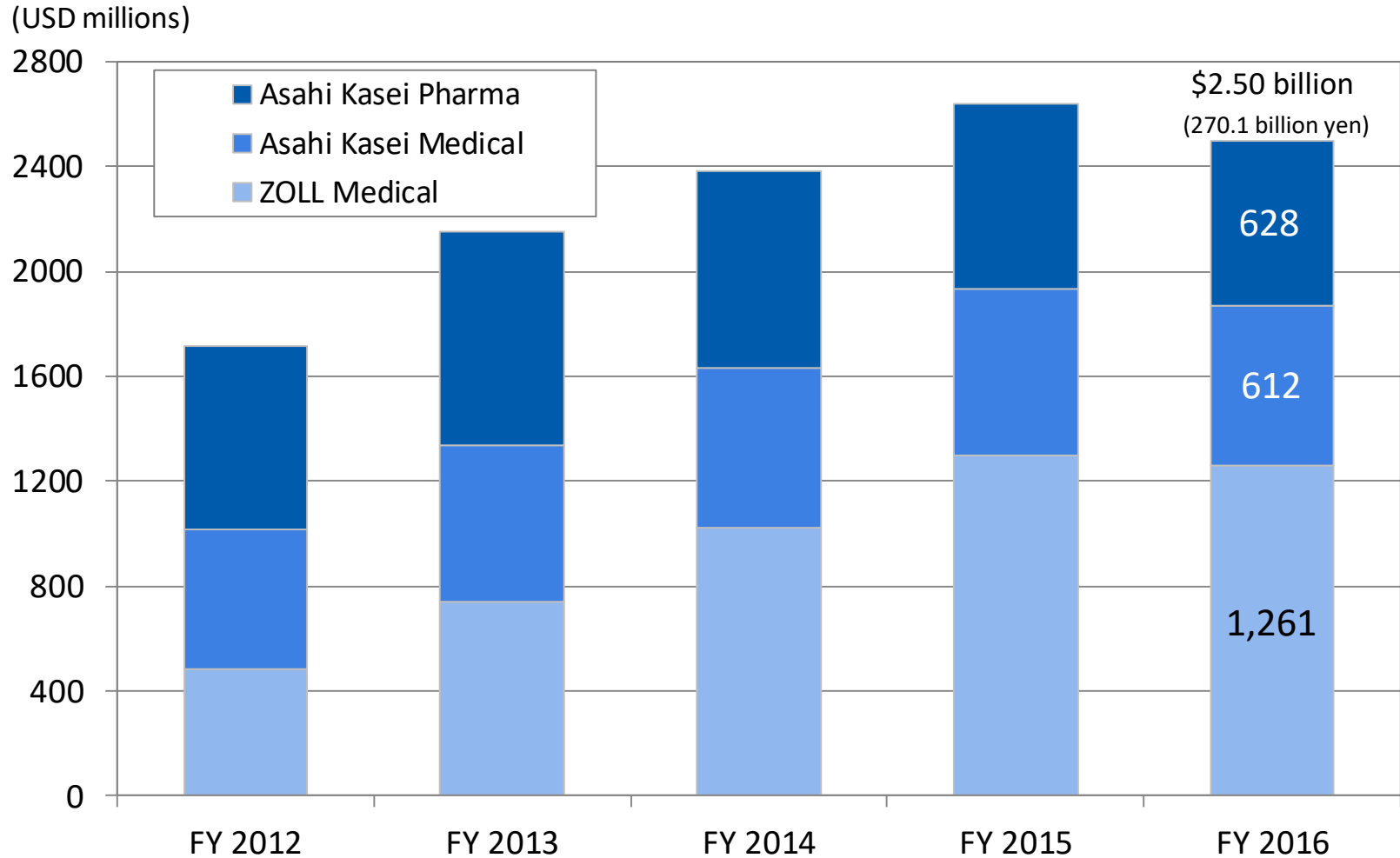


ZOLL Medical

- LifeVest™ Wearable Defibrillator
- Defibrillators
- Data Solutions
- Intravascular Temperature Management (IVTM™) System

Asahi Kasei Health Care Sales

(FY 2012 – FY 2016)



1 USD = 108 JPY

Note: The Asahi Kasei fiscal year extends from April to March of the following year

Asahi Kasei Pharma Snapshot

Establishment	1920 (as Toyo Jozo Co., Ltd.)						
President	Yutaka Shibata						
Net Sales	\$629 million (67.8 billion yen) (FY 2016)						
R&D Investment	Approximately 20% of net sales						
Employees	2,054 (as of March 31, 2017)						
	<table> <tr> <td>Research</td> <td>~230</td> </tr> <tr> <td>Clinical Development</td> <td>~100</td> </tr> <tr> <td>Medical Representatives</td> <td>~700</td> </tr> </table>	Research	~230	Clinical Development	~100	Medical Representatives	~700
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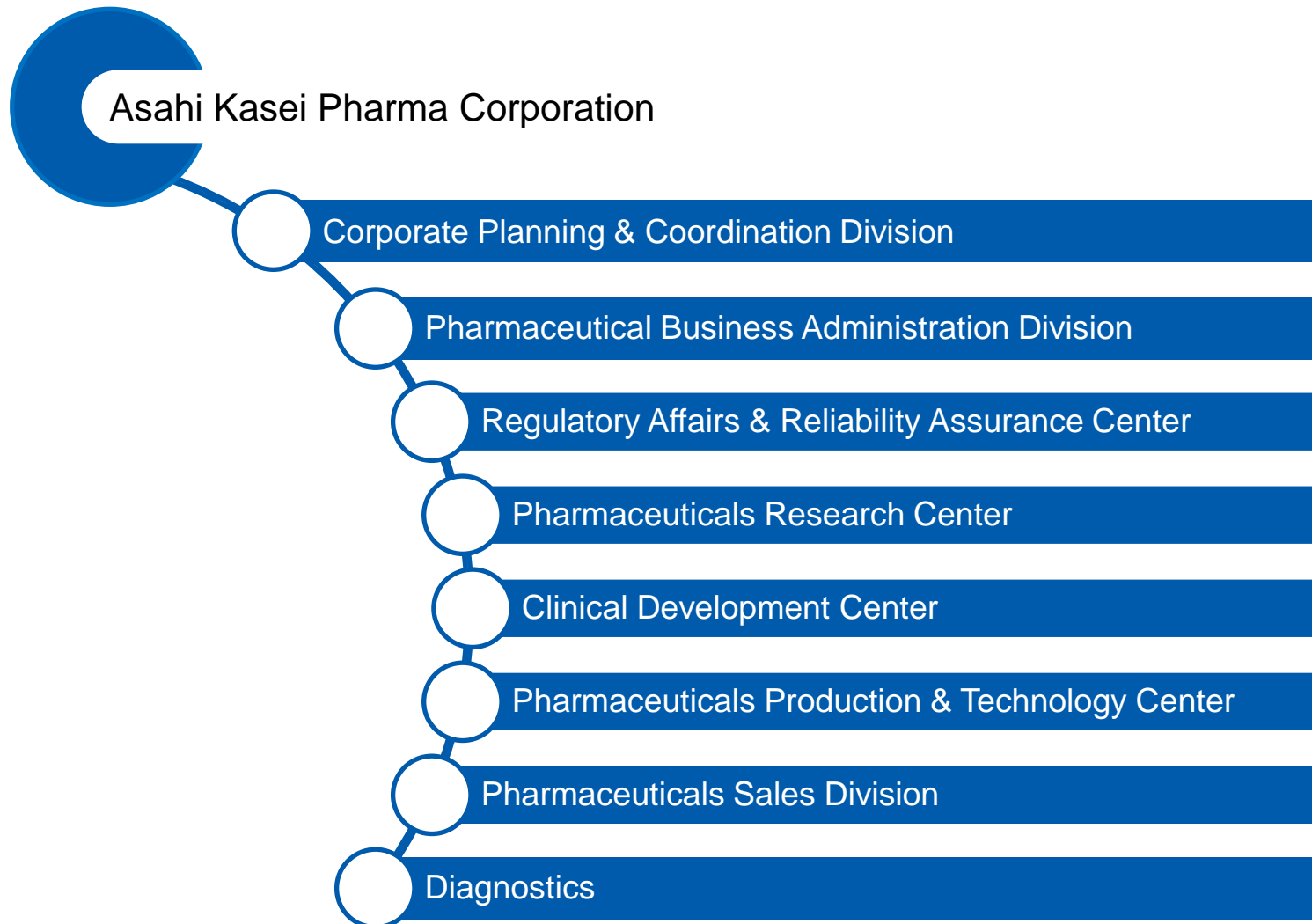
Areas of Interest

■ Pain Management
 ■ Musculoskeletal Disorders
 ■ Critical Care Medicine

Selected Products and Indications

■ Teribone™	(teriparatide acetate)	<i>osteoporosis</i>
■ ■ Elcitonin™	(elcatonin)	<i>pain due to osteoporosis</i>
■ Bredinin™	(mizoribine)	<i>rheumatoid arthritis and others</i>
■ Flivas™	(naftopidil)	<i>dysuria accompanying benign prostatic hyperplasia (BPH)</i>
■ Recomodulin™	(thrombomodulin alfa)	<i>disseminated intravascular coagulation (DIC)</i>
■ Eril™	(fasudil hydrochloride hydrate)	<i>improvement of cerebral vasospasm and delayed cerebral ischemic symptoms after subarachnoid hemorrhage</i>

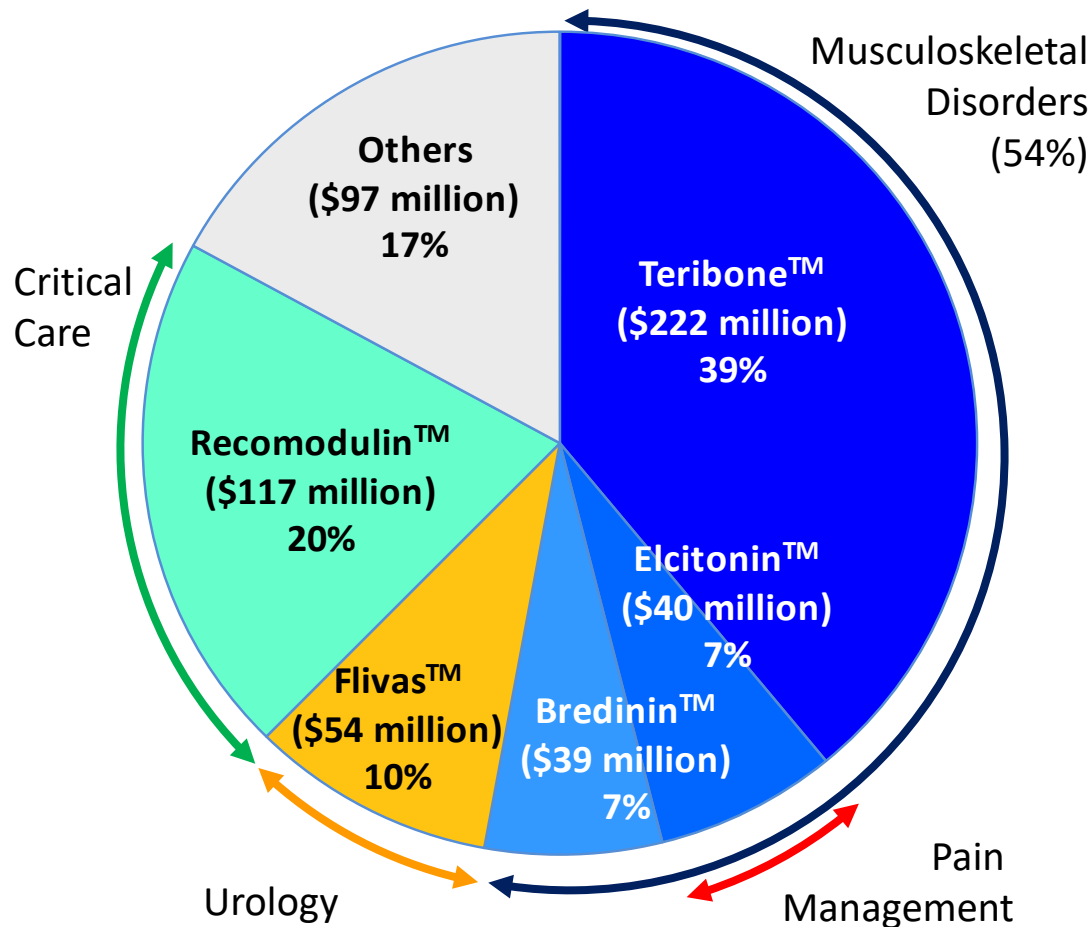
Asahi Kasei Pharma Organization Chart



Pharmaceutical Product Sales (Japan)

Asahi Kasei Pharma Pharmaceutical Product Sales (Japan)

\$569 million (61.5 billion yen) (FY 2016)



Product and Selected Indications

Teribone™ (teriparatide acetate)
osteoporosis with high risk of fracture

Elcitonin™ (elcatonin)
pain due to osteoporosis

Bredinin™ (mizoribine)
rheumatoid arthritis and others

Flivas™ (naftopidil)
dysuria accompanying benign prostatic hyperplasia

Recomodulin™ (thrombomodulin alfa)
disseminated intravascular coagulation (DIC)

Development Pipeline

	Phase 1	Phase 2	Phase 3	Regulatory Review	Approval	
Reclast® (zoledronic acid) Osteoporosis						<ul style="list-style-type: none"> <input type="checkbox"/> Licensed from Novartis <input type="checkbox"/> Once yearly formulation <input type="checkbox"/> Launched in Japan in November 2016
MN-10-T (teriparatide acetate) Osteoporosis with high risk of fracture						<ul style="list-style-type: none"> <input type="checkbox"/> Application filed in Japan to extend duration of treatment to 24 months <input type="checkbox"/> Approved in May 2017
ART-123 (thrombomodulin alfa) Severe sepsis with coagulopathy						<ul style="list-style-type: none"> <input type="checkbox"/> Multinational Phase 3 study <input type="checkbox"/> Marketed since 2008 in Japan for disseminated intravascular coagulation (DIC)
HE-69 (mizoribine) Lupus nephritis and nephrotic syndrome						<ul style="list-style-type: none"> <input type="checkbox"/> Additional indications outside Japan <input type="checkbox"/> Marketed since 1984 in Japan for rheumatoid arthritis, lupus nephritis, nephrotic syndrome, immunosuppression following transplantation
ART-123 (thrombomodulin alfa) Acute exacerbation of idiopathic pulmonary fibrosis (AE-IPF)						<ul style="list-style-type: none"> <input type="checkbox"/> New indication <input type="checkbox"/> Marketed since 2008 in Japan for disseminated intravascular coagulation (DIC)
MN-10-T (teriparatide acetate) Osteoporosis with high risk of fracture						<ul style="list-style-type: none"> <input type="checkbox"/> New dosage form (autoinjection)
ART-123 (thrombomodulin alfa) Chemotherapy induced peripheral neuropathy (CIPN)						<ul style="list-style-type: none"> <input type="checkbox"/> New indication <input type="checkbox"/> Marketed since 2008 in Japan for disseminated intravascular coagulation (DIC)

Partnership Activities of the Pharmaceuticals Research Center

June 2016	Orion Corporation Strategic collaboration for R&D and commercialization in the field of pain management
March 2016	Array BioPharma In-license ARRY-954 (for chronic pain) : East Asian territory
March 2016	PeptiDream Inc. Joint R&D for identifying non-standard peptides against multiple drug-target molecules
November 2013	RaQualia Pharma Inc. Joint R&D of new drugs that target specific ion channels

Drug Discovery at Asahi Kasei Pharma

Focused on innovative drug development in **the fields of pain management, orthopedics, and musculoskeletal disorders**



Chronic Pain



Rheumatoid Arthritis



bone/cartilage tissue repair and regeneration

Open Innovation Program

- Established in October 2016
- Managed by five program officers
(One officer is located in the US Office of CVC.)
- Mission
 - In-license or purchase of preclinical drug candidates
 - Pursuit of research partnership opportunities
 - Search for new drug candidates
 - Quest for new drug discovery technologies
- Clinical areas of interest
 - Rheumatoid arthritis
 - Chronic pain
 - bone/cartilage tissue repair and regeneration
- Potential collaboration partners
Academic institutions, venture corporations, and mid-size pharmaceutical companies

