

## INFECTION MEDICINES

### MARKETED PRODUCTS

**Synagis** (palivizumab) is a humanised monoclonal antibody (MAb) for the prevention of serious lower respiratory tract disease caused by respiratory syncytial virus (RSV) in paediatric patients at high risk of acquiring RSV disease (pneumonia and bronchiolitis).

**Merrem/Meronem**<sup>1</sup> (meropenem) is an intravenous carbapenem anti-bacterial for the treatment of serious, hospital-acquired infections.

**FluMist** (influenza virus vaccine live, intranasal) is a live, attenuated vaccine for the prevention of disease caused by influenza A and B viruses in healthy children and adolescents, two to 17 years of age, and healthy adults, 18 to 49 years of age.

### 2007 IN BRIEF

- > **Merrem sales of \$773 million, up 20%.**
- > **Steady underlying growth for Merrem in the US (32%) and in Western Europe (20%).**
- > **Since the acquisition of MedImmune in June, Synagis sales of \$618 million and FluMist sales of \$53 million.**
- > **Acquisition of Arrow Therapeutics has added anti-viral capability.**
- > **Acquisition of MedImmune has added infection-focused monoclonal antibody and vaccine technology.**
- > **Work dedicated to finding a new treatment for tuberculosis continues at our R&D facility in Bangalore, India.**

<sup>1</sup> Licensed from Dainippon Sumitomo Pharma Co., Ltd.

### PERFORMANCE

	2007			2006			2005	2007 compared to 2006		2006 compared to 2005	
	Sales \$m	Growth underlying \$m	exchange effects \$m	Sales \$m	Growth underlying \$m	exchange effects \$m		Growth underlying %	Growth reported %	Growth underlying %	Growth reported %
Merrem/Meronem	773	121	48	604	96	3	505	20	28	19	20
Synagis <sup>2</sup>	618	618	–	–	–	–	–	n/m	n/m	n/m	n/m
FluMist <sup>2</sup>	53	53	–	–	–	–	–	n/m	n/m	n/m	n/m
Other	270	(12)	11	271	(59)	(4)	334	(4)	–	(18)	(19)
<b>Total</b>	<b>1,714</b>	<b>780</b>	<b>59</b>	<b>875</b>	<b>37</b>	<b>(1)</b>	<b>839</b>	<b>89</b>	<b>96</b>	<b>4</b>	<b>4</b>

<sup>2</sup> Sales of these MedImmune products are consolidated in AstraZeneca accounts from 1 June 2007. As a result, there are no prior period sales included.

### PIPELINE

Compound	Mechanism	Areas under investigation	Phase			Estimated filing date	
			I	II	III	Europe	US
<b>NCEs</b>							
Motavizumab (MedImmune)	humanised monoclonal antibody	RSV prevention	■	■	■	1H 2009	Filed
CytoFab™	anti-TNF-alpha polyclonal antibody	severe sepsis	■	■			
EBV vaccine <sup>3</sup>	Epstein-Barr virus vaccine	post-transplant proliferative disease	■	■			
AZD2836	5a replicon	hepatitis C	■	■			
MEDI-524 (motavizumab)	MAb targets F-protein	early and late treatment of disease in infants >1 yr	■	■			
MEDI-534	RSV/PIV-3 vaccine	intranasal immunisation	■				
MEDI-560	PIV-3 vaccine	intranasal immunisation	■				
H5N1	H5N1 influenza virus vaccine	pandemic influenza vaccine	■				
MEDI-564	F-protein inhibitor	RSV treatment	■				
CMV vaccine	CMV vaccine	cytomegalovirus	■				
MEDI-557	YTE – extended half-life RSV MAb	RSV prophylaxis	■				
<b>Line extensions</b>							
FluMist (MedImmune)	live, attenuated, intranasal influenza virus vaccine	influenza	■	■	■	2Q 2008	Launched

<sup>3</sup> Partnered product.

For discontinued projects see page 30.

## WE AIM TO BUILD A LEADING FRANCHISE IN THE TREATMENT OF INFECTIOUS DISEASES BY INCREASING THE SALES OF THE MARKETED BRANDS *SYNAGIS*, *MERREM* AND *FLUMIST* AND BRINGING NEW PRODUCTS TO MARKET BY EXPLOITING OUR STRUCTURAL AND GENOMIC-BASED DISCOVERY TECHNOLOGIES AND OUR ANTIBODY PLATFORMS.

### PRODUCTS

*Merrem/Meronem* (meropenem) is a carbapenem antibiotic which is active against most bacteria which cause hospital-acquired infections such as pneumonia. *Merrem* is one of the leading products in the carbapenem market and has a growing share of the intravenous antibiotic market because of its ultra-broad spectrum and the continued low incidence of resistance.

*Synagis* is used for the prevention of serious lower respiratory tract disease caused by respiratory syncytial virus (RSV) in children at high risk of RSV disease. It is the first monoclonal antibody (MAb) approved in the US for an infectious disease and, since its launch in 1998, it has become the standard of care for RSV prevention, having replaced MedImmune's first anti-RSV product, RespiGam, a polyclonal antibody that required a four-hour infusion on a monthly basis. A substantial product improvement, *Synagis* is administered by intra-muscular injection.

*FluMist* is a live, attenuated nasally delivered vaccine approved for the prevention of disease caused by influenza A and B viruses in healthy children and adults, two to 49 years of age. In January 2007, the US Food and Drug Administration (FDA) approved a refrigerated formulation of the vaccine (previously, only a frozen formulation had been available). In September 2007, the FDA approved the expansion of the label for *FluMist* to include children two to five years of age, for which the drug had not previously been indicated. The basis for this was a phase III study involving nearly 8,500 children that showed children immunised with *FluMist* reported 55% fewer cases of influenza compared with children who received the injectable vaccine.

### PIPELINE

Discovery work at our R&D facility in Boston, US continues to focus on anti-bacterial agents with a novel mechanism of action. The programme is now delivering candidates into the exploratory phase of development.

In January 2007, we announced the acquisition of Arrow Therapeutics Ltd, a biotechnology company focused on the discovery and development of small molecule, anti-viral therapies with a particular focus on hepatitis C. In June 2007, the acquisition of MedImmune, Inc. expanded our infection R&D capability further by providing access to MAb and vaccine technologies. These two transactions have been important strategic steps in strengthening our portfolio of anti-infective treatments and complementing our existing capabilities in anti-bacterials. They also fit with our decision to re-focus our disease area research, with infection now one of our key therapy areas. The acquisitions augment our portfolio with clinical and pre-clinical compounds and programmes. From Arrow Therapeutics, these include a novel anti-hepatitis C virus compound that targets the NS5a protein, AZD2836 (formerly A-831) in phase II.

In line with our announcement in November 2006, the development programme for CytoFab™, our treatment for severe sepsis licensed from Protherics Inc., has been expanded and delayed with the addition of a phase II study programme based on the recently completed new manufacturing methodology. Sepsis is a life-threatening condition resulting from uncontrolled severe infections, which affects an estimated three million people a year worldwide.

### MedImmune

MedImmune's industry-leading development of products to prevent paediatric respiratory infectious diseases is continuing. Various positive trial data have been presented during 2007 for its next-generation drug candidate, motavizumab (MEDI-524), a MAb targeting RSV disease. Data from a phase III study comparing motavizumab to *Synagis* were presented in May 2007 at the Pediatric Academic Societies' meeting in Toronto, Canada. In August 2007, a placebo-controlled phase III study with motavizumab in full-term native American infants was unblinded due to encouraging preliminary efficacy data. MedImmune submitted a biologics license application (BLA) to the FDA for motavizumab early in 2008. MedImmune is also developing a vaccine against RSV, which is in phase I clinical trials.

### Dedicated tuberculosis (TB) research

We are committed to making a contribution to improving health in the developing world. Backed by our skills and experience in infection research, we are working to find a new treatment for TB. We have a dedicated scientific resource in Bangalore, India that is focused on finding a new, improved treatment for TB that will act on drug-resistant strains, simplify the treatment regime (current regimes are complex and lengthy, meaning many patients give up before the infection is fully treated) and be compatible with HIV/AIDS therapies (TB and HIV/AIDS form a lethal combination, each speeding the other's progress). Over 80 scientists in Bangalore work closely with our infection research centre in Boston, US as well as with academic leaders in the field, and they have full access to all AstraZeneca's platform technologies, such as high throughput screening and compound libraries. Finding a new treatment is a complex process, but we hope to have identified a candidate drug for testing in man within the next three to four years.