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RESPIRATORY DISEASES

Respiratory diseases are very common. Chronic obstructive pulmonary disease (COPD) and bronchial asthma are among the most prevalent chronic diseases and a frequent cause of morbidity and premature deaths worldwide.

Idiopathic pulmonary fibrosis (IPF) is a rare disease which is severely debilitating and ultimately lethal.








COPD

COPD is a chronic disease of the lungs that causes coughing, excessive mucus production and dyspnea and ultimately destroys the lung tissue. The alveoli and thus gas exchange are the most affected. This leads to a limitation of airflow, causing shortness of breath and other respiratory symptoms. The airflow limitation is only partially reversible and usually worsens over time, leading to disability and ultimately to death. Symptoms such as excess cough and breathlessness are the main reasons why COPD is very stressful for patients. Lung emphysema and chronic bronchitis are the main manifestations of COPD.

COPD is caused by continuous damage to the lungs resulting from inhaling pollutants, primarily cigarette smoke. However, other factors also need to be considered including indoor and outdoor air pollution. The course of COPD, which is a disease that occurs in the second half in a human's life, is characterized by an accelerated loss of lung function compared to normal ageing and by occasional sudden worsening of symptoms and function referred to as acute exacerbations. This can lead to a downward spiral of worsening symptoms and thus further inactivity.

Bronchial asthma

Bronchial asthma is a chronic inflammatory disorder of the airways. The inflammation is accompanied by airway hyper-responsiveness, which leads to a narrowing of the airways and recurrent episodes of wheezing, breathlessness and coughing. These symptoms occur particularly at night or in the early hours of the morning. It is now known that asthma can be triggered by genetic and environmental factors (e.g. allergens and viral infections). Unlike COPD, asthma can occur very early in childhood; it can also be present in adolescents or adults. Asthma is often underestimated as an easy-to-manage condition. However, almost one in two patients with asthma still experience symptoms while receiving maintenance therapy, putting them at increased risk of potentially life-threatening asthma exacerbations. In addition, patients often adjust their daily lives to accommodate their conditions and avoid physical exertion in day-to-day activities, which has a negative impact on quality of life.

Indications	Brand Names	Active Ingredients	
– Chronic obstructive pulmonary disease (COPD)	SPIRIVA® SPIRIVA® HANDIHALER® SPIRIVA® RESPIMAT®	<i>tiotropium bromide</i>	Maintenance treatment of patients with COPD (including chronic bronchitis and emphysema), maintenance treatment of associated dyspnoea and for prevention of exacerbations.
			
– Bronchial asthma	SPIRIVA® RESPIMAT®	<i>tiotropium bromide</i>	An add-on maintenance bronchodilator treatment in patients aged six years and older with severe asthma who experienced one or more severe asthma exacerbations in the past year.*
			
	* SPIRIVA® RESPIMAT® is approved for use in asthma in the EU, Japan, the USA and many other countries. The label varies by country. Please refer to the local product information.		
– Chronic obstructive pulmonary disease (COPD)	SPIOLTO® RESPIMAT® STIOLTO® RESPIMAT® INSPIOLTO® RESPIMAT®	<i>tiotropium bromide, olodaterol hydrochloride</i>	Maintenance treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD).
			
– Chronic obstructive pulmonary disease (COPD)	STRIVERDI® RESPIMAT®	<i>olodaterol hydrochloride</i>	Maintenance treatment of patients with chronic obstructive pulmonary disease (COPD).
			
– Reversible bronchospasms associated with obstructive airway diseases	COMBIVENT® RESPIMAT®	<i>ipratropium bromide, salbutamol, sulphate</i>	A combination of a short-acting anticholinergic and beta-adrenergic for the management of reversible bronchospasms associated with obstructive airway diseases in patients requiring more than one bronchodilator.
			
– Chronic obstructive pulmonary disease (COPD) – Chronic bronchitis – Bronchial asthma	ATROVENT®	<i>ipratropium bromide</i>	Prevention and treatment of shortness of breath in patients with chronic obstructive pulmonary disease (COPD) and mild to moderate bronchial asthma in adulthood and childhood as a supplement to beta-agonists in cases of acute asthma.
			
– Chronic obstructive airway disorders	BERODUAL® BRONCHODUAL® DUOVENT®	<i>ipratropium bromide, fenoterol hydrobromide</i>	Prevention and treatment of symptoms in chronic obstructive airway disorders with reversible airflow limitation such as bronchial asthma and especially chronic bronchitis with or without emphysema.
			

RESPIRATORY DISEASES (CONTINUED)

Idiopathic pulmonary fibrosis (IPF)

IPF is a chronic progressive lung disease associated with a markedly reduced life span and affecting as many as 14–43 people per 100,000 worldwide. IPF is characterized by progressive scarring of lung tissue and a loss of lung function over time. Development of scarred tissue is called fibrosis. Over time, as the tissue thickens and stiffens with scarring, the lungs lose their ability to take in and transfer oxygen into the bloodstream, and vital organs do not get enough oxygen. As a result, individuals with IPF experience shortness of breath, even when resting, and often have difficulty coping with the demands of everyday life due to their limited physical capacity.




Acute IPF exacerbations are defined as rapid deteriorations of symptoms and lung function within days or weeks. These events can occur at any point in the course of the disease, even at first presentation, and are associated with high mortality. All patients with IPF are at risk of acute IPF exacerbations.

Systemic sclerosis associated interstitial lung disease (SSc-ILD)

Systemic sclerosis (SSc), also known as scleroderma, is a rare incurable autoimmune disease affecting connective tissue. The disease is estimated to affect 15 to 24 people in every 100,000 in Europe and 2.5 million worldwide. SSc impacts four times as many women as men, and the onset of the disease typically occurs at a young age – between 25 and 55 years. It can cause scarring (fibrosis) of the skin as well as major organs such as the heart, lungs, digestive tract and kidneys and can have life-threatening complications. Approximately 25% of patients develop significant pulmonary involvement within three years of diagnosis. When SSc affects the lungs, it can cause interstitial lung disease (ILD), known as SSc-ILD. It is a key driver of mortality among people with SSc, accounting for approximately one third of deaths.

Other chronic fibrosing interstitial lung diseases (ILDs) with a progressive phenotype beyond idiopathic pulmonary fibrosis (IPF)

Interstitial lung diseases are a heterogeneous group of more than 200 mostly rare conditions of the lung that run the risk of developing pulmonary fibrosis. Fibrosis is a pathological multiplication of the connective tissue leading to usually chronic and irreversible scarring of the lung tissue. The course of interstitial lung disease may develop into a progressive fibrosing ILD, leading to a decline function associated with increased morbidity and mortality. Idiopathic pulmonary fibrosis (IPF) is a phenotype of a chronic fibrosing ILD. The course of the disease and symptoms are similar to chronic PF-ILDs, despite the underlying ILD diagnosis. On average, 18–32% of ILD patients will develop progressive pulmonary fibrosis.

Indications	Brand Names	Active Ingredients	
<ul style="list-style-type: none"> – Bronchial asthma 	BEROTEC®	<i>fenoterol hydrobromide</i>	 <p>Symptomatic treatment of acute asthma attacks.</p> <p>Prophylaxis of exercise-induced asthma bronchiale.</p> <p>Symptomatic treatment of allergic and non-allergic asthma bronchiale and other conditions with reversible airway narrowing, e.g. chronic obstructive bronchitis.</p>
<ul style="list-style-type: none"> – Bronchial asthma – Allergic rhinitis 	ALESION® FLURINOL®	<i>epinastine hydrochloride</i>	 <p>Prophylactic treatment of patients with bronchial asthma. Prophylaxis and symptomatic treatment of allergic rhinitis.</p>
<ul style="list-style-type: none"> – Idiopathic pulmonary fibrosis (IPF) – Systemic sclerosis associated interstitial lung disease (SSc-ILD) – Chronic fibrosing interstitial lung diseases (ILDs) with a progressive phenotype 	OFEV®	<i>nintedanib</i>	 <p>In more than 80 countries for the treatment of patients with idiopathic pulmonary fibrosis (IPF).</p> <p>In more than 50 countries as therapy for SSc-ILD to slow down the rate of decline in pulmonary function.</p> <p>In more than 40 countries for the treatment of other chronic fibrosing interstitial lung diseases (ILDs) with a progressive phenotype beyond IPF.</p>

CARDIOVASCULAR AND METABOLIC DISEASES

Cardiovascular (CV) disease is the leading cause of death worldwide and is still increasing in prevalence. Currently, it is responsible for nearly one in three deaths worldwide. One key risk factor for developing cardiovascular disease is the presence of diabetes: people with type 2 diabetes are two to four times more likely to develop cardiovascular disease than people without diabetes, and as a result, their life expectancy is up to 12 years shorter. Proper control of diabetes and other treatable risk factors is therefore vital for the prevention of cardiovascular events.

Stroke

Stroke is the rapidly developing loss of brain functions caused by a disrupted blood flow to the affected brain tissue. This can be due to ischemia (lack of blood supply) caused by thrombosis or embolism, or due to bleeding (hemorrhagic stroke). As a result, the affected area of the brain is unable to function and the damage quickly becomes permanent, if untreated. A stroke is an acute event requiring emergency diagnosis and intervention. Worldwide, stroke is one of the leading causes of death and long-term disability.

Symptoms of a transient ischemic attack (TIA) are similar to stroke, but last for only a few minutes or hours and do not result in permanent neurological damage. As a TIA may precede a stroke, emergency medical care and subsequent preventive treatment may be necessary.

Atrial fibrillation

Atrial fibrillation (AF) is the most common sustained heart rhythm condition, affecting approximately 2% of the total population. One in four adults over 40 develops AF in their lifetime. Patients with AF are at higher risk of developing blood clots in their upper left heart chamber, which can cause a stroke if the clot breaks loose and travels to the brain. AF leads to a five-fold increase in the risk of stroke, resulting in up to three million patients worldwide suffering AF-related strokes each year. For patients with AF, the risk of stroke can be reduced by appropriate anticoagulation therapy.

Prevention and treatment of venous thromboembolism

Venous thromboembolism (VTE) is an umbrella term that encompasses deep vein thrombosis (DVT) and pulmonary embolism (PE). DVT occurs when a thrombus (blood clot) forms in a deep vein, most commonly in the leg, and partially or completely blocks the flow of blood. As the thrombus grows, a portion may break away from the main clot and travel in the circulatory system to the lungs. The lodging of a blood clot in the arteries of the lung is called a PE. VTE is a serious disorder with potentially fatal consequences.

Patients undergoing orthopedic surgery are at considerable risk of developing DVT, and chronic venous insufficiency and/or pulmonary hypertension may develop in the longer term. To prevent VTE events and their consequences after orthopedic surgery, patients should receive some kind of thromboprophylaxis. Patients who have already suffered from VTE require anticoagulant treatment for secondary prevention of a recurrent thromboembolic event.

Reversing anticoagulation

Anticoagulation therapy offers important benefits for patients at risk of thromboembolic events. However, even though rare, there may be situations when rapid reversal of anticoagulation is medically necessary, e.g. if a patient taking an anticoagulant is involved in a severe car accident and needs emergency surgery.

Indications	Brand Names	Active Ingredients	
<ul style="list-style-type: none"> – Stroke prevention in atrial fibrillation – Primary prevention of venous thromboembolic events after orthopedic surgery – Treatment and secondary prevention of venous thromboembolic events 	<p>PRADAXA® PRADAXAR® PRAZAXA®</p>	<p><i>dabigatran etexilate</i></p>	<p>Prevention of strokes and blood clots in patients with atrial fibrillation.</p> <p>Primary prevention of venous thrombo-embolic events (VTE) in adults after elective total hip or knee replacement surgery.</p> <p>Treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE), and secondary prevention of recurrent DVT and PE in adults.</p>
<ul style="list-style-type: none"> – Specific reversal of PRADAXA® (dabigatran etexilate) 	<p>PRAXBIND®</p>	<p><i>idarucizumab</i></p>	<p>PRAXBIND® is a specific reversal agent for dabigatran and is indicated in adult patients treated with PRADAXA® (dabigatran etexilate) when rapid reversal of its anticoagulant effects is required: for emergency surgery/urgent procedures; in life-threatening or uncontrolled bleeding.</p>
<ul style="list-style-type: none"> – Hypertension – Cardiovascular morbidity and mortality prevention 	<p>MICARDIS®</p>	<p><i>telmisartan</i></p>	<p>Treatment of hypertension. For the reduction of the risk of myocardial infarction (heart attack), stroke or death from cardiovascular (CV) causes in patients 55 years of age or older at high risk of developing major CV events who are unable to take ACE inhibitors (US).</p> <p>For the reduction of cardiovascular morbidity in patients with manifest atherothrombotic cardiovascular disease (history of coronary heart disease, stroke or peripheral arterial disease), or patients with type 2 diabetes mellitus with documented target organ damage (EU).</p>
<ul style="list-style-type: none"> – Hypertension 	<p>MICARDISPLUS® MICARDIS® PLUS MICARDIS® HCT CO-MICARDIS®</p>	<p><i>telmisartan; hydrochlorothiazide</i></p>	<p>Treatment of hypertension alone or with other antihypertensive agents, to lower blood pressure. Lowering blood pressure reduces the risk of fatal and nonfatal cardiovascular events, primarily strokes and myocardial infarctions. Not indicated for initial therapy (US).</p> <p>Treatment of essential hypertension. MICARDISPLUS® fixed dose combination is indicated in adults whose blood pressure is not adequately controlled on telmisartan alone (EU).</p>






CARDIOVASCULAR AND METABOLIC DISEASES (CONTINUED)

Hypertension and cardiovascular diseases

Hypertension (high blood pressure) is a chronic disease in which the blood pressure is chronically elevated. Hypertension is also one of the major risk factors for stroke, heart attacks, heart failure and chronic renal failure. The primary goal of anti-hypertensive treatment is to prevent such cardiovascular events and to reduce the risk of cardiovascular mortality.

Acute myocardial infarction

An acute myocardial infarction, or heart attack, occurs when a thrombus (blood clot) suddenly prevents blood flow to an area of the heart muscle. Unless the blood flow is restored quickly, the affected section of heart muscle becomes permanently damaged. Heart attacks are one of the most common causes of death in industrialized countries.

Indications	Brand Names	Active Ingredients	
– Hypertension	TWYNSTA® MICAMLO® MICARDIS® AMLO MICARDIS® DUO	<i>telmisartan, amlodipine</i>	<p>Treatment of hypertension alone or with other antihypertensive agents. As initial therapy in patients likely to need multiple antihypertensive agents to achieve their blood pressure goals (US).</p> <p>Add-on therapy in adult patients with not adequately controlled blood pressure on amlodipine, and replacement therapy in adult patients receiving telmisartan and amlodipine from separate tablets (EU).</p> 
– Acute ischemic stroke – Acute myocardial infarction – Acute massive pulmonary embolism – Catheter clearance due to thrombotic occlusion	ACTILYSE® ACTILYSE® CATHFLO®	<i>alteplase</i>	<p>Fibrinolytic treatment of acute ischemic stroke, acute myocardial infarction, acute massive pulmonary embolism. Fibrinolytic treatment of occluded catheters.</p> 
– Secondary prevention of stroke or transient ischemic attacks (TIA)	AGGRENOL® ASASANTIN® ASASANTIN® RETARD	<i>dipyridamole, acetylsalicylic acid</i>	<p>Prevention of stroke following an initial first stroke, or transient ischemic attacks (TIA).</p> 
– Acute myocardial infarction	METALYSE®	<i>tenecteplase</i>	<p>Fibrinolytic treatment of acute myocardial infarction.</p> 
– Hypertension	CATAPRESAN® CATAPRES® CATAPRESSAN®	<i>clonidine; clonidine hydrochloride</i>	<p>Treatment of hypertension.</p> 






CARDIOVASCULAR AND METABOLIC DISEASES (CONTINUED)

Diabetes and the cardio-renal-metabolic system

Type 2 diabetes is a chronic, progressive condition associated with elevated blood sugar levels. People with type 2 diabetes have a high burden of comorbidities and risk factors, which include heart failure, kidney disease, hypertension, and obesity. Cardio-renal-metabolic conditions affect more than one billion people worldwide and are a leading cause of death.

Effective treatment of people with type 2 diabetes, in addition to diet and exercise, demands an early and balanced multidisciplinary approach. The interconnected nature of the cardio-renal-metabolic systems requires addressing blood sugar control and cardiovascular risk factors in the short term and reducing the overall risk of disease progression and associated heart and kidney complications in the long term.

A collaborative multidisciplinary team approach to optimize patient care by coordinating treatment of related comorbidities, including the use of emerging medications with broad cardiovascular, renal, and metabolic effects, can help improve outcomes for people with these serious chronic conditions.

Indications	Brand Names**	Active Ingredients	
- Type 2 diabetes mellitus	JARDIANCE® JARDIANZ®	<i>empagliflozin</i>	 <p>Treatment of adults with type 2 diabetes mellitus as an adjunct to diet and exercise to improve glycemic control and to reduce the risk of cardiovascular death in adults with type 2 diabetes mellitus and established cardiovascular disease.*</p> <p><i>* US indication, December 2016. The label varies by country. Please refer to the local product information.</i></p>
- Type 2 diabetes mellitus	SYNJARDY® JARDIANCE DUO® JARDIANZ DUO® SYNJARDY® XR	<i>empagliflozin, metformin hydrochloride</i>	 <p>Treatment of adults with type 2 diabetes mellitus as an adjunct to diet and exercise to improve glycemic control when treatment with both empagliflozin and metformin is appropriate.*</p> <p><i>* US indication, December 2016. The label varies by country. Please refer to the local product information.</i></p>
- Type 2 diabetes mellitus	GLYXAMBI® TRADIANCE® JARDIANZ DPP®	<i>empagliflozin, linagliptin</i>	 <p>Treatment of adults with type 2 diabetes mellitus as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus when both empagliflozin and linagliptin are appropriate treatments.*</p> <p><i>* US indication, March 2015. The label varies by country. Please refer to the local product information.</i></p>
- Type 2 diabetes mellitus	TRAJENTA® TRADJENTA® TRAZENTA® TRAYENTA®	<i>linagliptin</i>	 <p>Treatment of adults with type 2 diabetes mellitus as an adjunct to diet and exercise to improve glycemic control, used in monotherapy (if metformin is not tolerated or contraindicated) or in combination therapy.</p>
- Type 2 diabetes mellitus	JENTADUETO® TRAYENTA DUO® TRAJENTA DUO® TRAJENTAMET® JENTADUETO® XR	<i>linagliptin, metformin hydrochloride</i>	 <p>Treatment of adults with type 2 diabetes mellitus as an adjunct to diet and exercise to improve glycemic control when treatment with metformin does not lead to sufficient control or when patients are treated with TRAJENTA® (linagliptin) and metformin.</p>

** Diabetes portfolio in collaboration with Eli Lilly and Company.

ONCOLOGY

Cancer is a threat to global health. In 2018, an estimated 18 million new cases of cancer were diagnosed worldwide and 9.6 million people died from cancer, nearly one in six global deaths (WHO World Cancer Factsheet 2018). The most common diagnosed cancer types were lung cancer (nearly 12%), breast cancer (nearly 12%), colorectal cancer (10%), prostate cancer (7%) and stomach cancer (6%).

Lung cancer

Lung cancer refers to malignant abnormal cell growth inside the lung tissue. It is the most common cancer with an estimated 2.1 million new cases per year worldwide (2018). Smoking is the primary cause of the disease, contributing to almost 90% of the cases. Recently, however, the incidence of lung cancer among non-smokers has increased. Lung cancer has a poor prognosis, with 1.8 million deaths per year, representing nearly 20% of all cancer deaths. Lung cancer symptoms are unspecific so that the disease may take many years to appear. Late diagnosis in an advanced stage of the disease results in an often dismal prognosis, with only 10–15% of lung cancer patients surviving five years or more following diagnosis.

There are different subtypes such as small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC). More than ten different molecular genetic aberrations (mutations) present in the tumor have been identified. By focusing on molecular changes that are specific to the respective subtype of lung cancer, targeted therapies have become more effective than other treatments. They show a survival benefit and are at the same time less harmful to normal cells, thereby reducing side effects.

Indications	Brand Names	Active Ingredients	
– Non-small cell lung cancer (NSCLC)	GIOTRIF® GILOTRIF®	<i>afatinib</i>	First-line treatment of adult patients with locally advanced or metastatic non-small cell lung cancer (NSCLC) whose tumors have activating epidermal growth factor receptor (EGFR) mutations.
			For the treatment of patients with locally advanced or metastatic NSCLC of squamous histology progressing on or after platinum-based chemotherapy.
– Non-small cell lung cancer (NSCLC)	VARGATEF®	<i>nintedanib</i>	Combination therapy with docetaxel for the treatment of adult patients with locally advanced, metastatic or locally recurrent non-small cell lung cancer (NSCLC) of adenocarcinoma tumor histology after first-line chemotherapy.



DISEASES OF THE CENTRAL NERVOUS SYSTEM

Mental and neurological diseases such as depression and Parkinson's disease significantly impact patients and their families and are also a substantial burden to society.

Parkinson's disease

Parkinson's disease (PD) is a degenerative disorder of the central nervous system. Patients usually notice motor symptoms like hand shaking (tremor) as their first sign of the disease, which may progress to include shaking of the arms, legs or head. Other motor symptoms that may develop over time include stiffness that often results in loss of facial expression and a gradual slowing or loss of motion, or "freezing". About 30–40% of patients also suffer from non-motor symptoms

associated with PD, such as depression and sleep disorders. The primary symptoms are the result of a lack of the neurotransmitter dopamine in distinct areas of the human brain.



Restless legs syndrome (RLS)



Restless legs syndrome (RLS) is a common neurological disorder characterized by an uncontrollable urge to move the legs, primarily occurring in the evening and night hours. It is usually accompanied by unpleasant and sometimes painful sensations in the legs as well as disturbed sleep resulting in daytime tiredness or sleepiness. The sensations are felt deep within the legs and are described as creeping, crawling or aching.

INFECTIOUS DISEASES

HIV infection/AIDS

Acquired immune deficiency syndrome (AIDS) is a set of symptoms and infections resulting from the damage to the human immune system caused by the human immunodeficiency virus (HIV). If untreated, infection with HIV progressively reduces the effectiveness of the immune system and leaves individuals susceptible to opportunistic infections and tumors. Babies of infected mothers are at risk of getting the virus during pregnancy, childbirth or breastfeeding.

Indications	Brand Names	Active Ingredients	
<ul style="list-style-type: none"> – Parkinson's disease (PD) – Restless legs syndrome (RLS) 	SIFROL® MIRAPEX® MIRAPEXIN® PEXOLA® MIRAPEX® ER SIFROL® ER	<i>pramipexole</i> <i>pramipexole dihydrochloride monohydrate</i>	 <p>Symptomatic treatment of idiopathic Parkinson's disease. It may be used as monotherapy or in combination with levodopa. Symptomatic treatment of idiopathic moderate to severe restless legs syndrome.</p>
<ul style="list-style-type: none"> – Sleep disorders 	LENDORMIN®	<i>brotizolam</i>	 <p>Short-term treatment of disorders of initiating and maintaining sleep. Insomnia requiring pharmacological intervention.</p>

Indications	Brand Names	Active Ingredients	
<ul style="list-style-type: none"> – HIV/AIDS 	VIRAMUNE® VIRAMUNE XR®	<i>nevirapine</i>	 <p>For the combination therapy of HIV-1 infection and (in several countries) for the prevention of mother-to-child transmission of HIV-1 in pregnant women who are not taking antiretroviral therapy at time of labor. Prolonged release tablets for once-daily dosing within combination therapy.</p>
<ul style="list-style-type: none"> – HIV/AIDS 	APTIVUS® ELODIUS®	<i>tipranavir</i>	 <p>Indicated for combination antiretroviral treatment of HIV-1-infected patients, co-administered with 200 mg of ritonavir, who are treatment-experienced and infected with HIV-1 strains resistant to more than one protease inhibitor.</p>

LIVESTOCK - SWINE

Infectious respiratory diseases

INGELVAC CIRCOFLEX® is the first single-dose piglet vaccine for the control of porcine circovirus disease (PCVD). INGELVAC CIRCOFLEX® contains IMPRANFLEX® adjuvant which allows for fresh mixing with INGELVAC MYCOFLEX® to form FLEXCOMBO® with the TwistPak system. Our INGELVAC® PRRS products are licensed for active immunization against the respiratory and reproductive form of porcine reproductive and respiratory syndrome (PRRS).

INGELVAC PROVENZA® protects against multiple IAV-S strains, providing protection where pigs are most vulnerable.

Infectious enteric diseases

ENTERISOL® ILEITIS is the first and only oral live vaccine against ileitis, globally the most prevalent enteric disease in swine caused by *Lawsonia intracellularis*. It is licensed to improve weight gain and to reduce growth variability associated with the disease. ENTERISOL® ILEITIS helps to reduce the total antimicrobial use in pork production.

Integrated Health Management (IHM)

With FARMERA® and SOUNDTALKS™ we will empower pig producers, breeders, retailers, and consumers to improve health, animal welfare, and efficiency by giving insights, predictions, and recommendations through our IHM solutions.

Indications	Brand Names	Active Ingredients	
– Infectious respiratory diseases	INGELVAC CIRCOFLEX®	<i>recombinant vaccine (porcine circovirus type 2, PCV2)</i>	 <p>For the active immunization of pigs over the age of two weeks against porcine circovirus type 2 to reduce mortality, clinical signs – including weight loss – and lesions in lymphoid tissues associated with porcine circovirus diseases (PCVD). In addition, vaccination has been shown to reduce PCV 2 nasal shedding, viral load in blood and lymphoid tissues, and duration of viremia.</p>
– Infectious respiratory diseases	INGELVAC® PRRS MLV INGELVAC PRRSFLEX® EU REPROCYC® PRRS EU	<i>attenuated live vaccine (PRRS virus type 2, type 1)</i>	 <p>Depending on the product, for the active immunization of pigs at various ages against porcine reproductive and respiratory syndrome virus (PRRS).</p>
– Infectious respiratory diseases	INGELVAC MYCOFLEX®	<i>inactivated vaccine (Mycoplasma hyopneumoniae)</i>	 <p>For the active immunization of pigs from the age of three weeks to reduce lung lesions following infections with Mycoplasma hyopneumoniae.</p>
– Infectious respiratory diseases	INGELVAC PROVENZA®	<i>attenuated live influenza vaccine (LAIV)</i>	 <p>For the vaccination of pigs one day of age or older against influenza virus strains H1N2 and H3N2.</p>
– Infectious enteric disease	ENTERISOL® ILEITIS	<i>attenuated live vaccine (Lawsonia intracellularis)</i>	 <p>For the active immunization of pigs from the age of three weeks against intestinal lesions caused by Lawsonia intracellularis infection and to reduce growth variability and loss of weight gain associated with the disease.</p>
– Respiratory diseases	SOUNDTALKS™*	<i>sound monitors, gateways and algorithms</i>	 <p>SOUNDTALKS™ is sound monitoring technology that detects early symptoms of respiratory distress in swine thanks to its 24/7 monitoring and algorithms.</p>
– Data capture forms and tools	FARMERA®	<i>mobile app. Digital data management and communication platform for swine production</i>	 <p>FARMERA™ allows being more efficient, effective, and proactive by enabling evidence-based decision making with real-time information when managing health and production in production companies.</p>






* SOUNDTALKS™ is a trademark of SoundTalks, N.V.

LIVESTOCK - CATTLE/RUMINANTS

Our cattle/ruminants business is a global leader in antiparasitic brands such as IVOMEC®, LONGRANGE® and EPRINEX®. These world renowned parasiticides treat and protect grazing animals from the harmful effects of internal and external parasites.

ZACTRAN® treats cattle with bacterial pneumonia and sheep with digital dermatitis infections.



BOVELA® is for active immunization of cattle of three months of age in terms of reproductive infectious diseases.

Indications	Brand Names	Active Ingredients	
– Internal and external parasites of cattle	IVOMEC®	<i>ivermectin</i>	<p>Depending on formulation, the product is for the treatment of nematodes, lice, mites, ticks, flies, lungworms and liver flukes.</p> 
– Internal and external parasites of cattle	LONGRANGE®	<i>eprinomectin, long-acting</i>	<p>The Theraphase® technology used to develop this formulation of eprinomectin allows a single treatment to last up to 100-150 days – long enough to break the parasite life cycle and effectively reduce parasite burdens on the pasture. LONGRANGE® is effective in the control of most internal and external parasites of cattle: gastrointestinal roundworms, lungworms, grubs, mites.</p> 
– Internal and external parasites of ruminants	EPRINEX®	<i>eprinomectin</i>	<p>Depending on formulation, the product is for the treatment of nematodes, lice, mites, ticks, flies and lungworms in cattle and sheep.</p> 
– Bacterial causes of respiratory disease and interdigital dermatitis (footrot)	ZACTRAN®	<i>gamithromycin</i>	<p>Depending on species indication (and country of registration), the product is for the treatment and metaphylaxis control of respiratory disease in cattle caused by key bacteria (Mannheimia, Pasteurella, Histophilus and Mycoplasma) and footrot disease in sheep caused by key bacteria (Fusobacterium and Dichelobacter).</p> 
– Reproductive infectious diseases in cattle	BOVELA®	<i>bovine viral diarrhoea (BVD) types 1 and 2</i>	<p>Reduces hyperthermia and minimizes the reduction of leukocyte count caused by bovine viral diarrhoea virus (BVDV-1 and BVDV-2); reduces virus shedding and viremia caused by BVDV-2 and prevents the birth of persistently infected calves caused by transplacental infection.</p> 

LIVESTOCK - CATTLE/RUMINANTS (CONTINUED)






Our vaccine PYRAMID®/PRESPOSE® is part of our expanding portfolio of respiratory and reproductive vaccines to prevent diseases that affect livestock.

METACAM® is a non-steroidal anti-inflammatory drug (NSAID), helping to minimize losses from inflammation and tissue damage in animals suffering from disease, hence addressing the need for maintained profitability and the concern for farm animal well-being.

Indications	Brand Names	Active Ingredients	
– Infectious respiratory diseases and reproductive disorders in cattle	PYRAMID® PRESPONSE®	family of multivalent vaccine combinations including different modified live viruses: bovine viral diarrhoea (BVD) types 1 and 2, infectious bovine rhinotracheitis (IBR), parainfluenza 3 (PI3) and bovine respiratory syncytial virus (BRSV), and bacteria: <i>Pasteurella multocida</i> , <i>Mannheimia haemolytica</i> , <i>L. canicola</i> , <i>L. grippotyphosa</i> , <i>L. hardjo</i> , <i>L. icterohaemorrhagiae</i> and <i>L. pomona</i>	<p>The PYRAMID®/PRESPONSE® family of vaccines provides broad coverage for BVD types 1 and 2, IBR, BRSV, PI3 and Mannheimia haemolytica with only a single dose. They contain the MetaStim®* adjuvant system to enhance the animal's response for greater protection (US and Canada only).</p> <p>* MetaStim® is a registered trademark of Zoetis Services LLC</p> 
– Pain and inflammatory disorders	METACAM®	meloxicam	<p>For the treatment of mastitis in lactating cows and for the control of pain associated with dehorning or surgery. It is also indicated for use in calves affected by diarrhoea and in cattle suffering from respiratory disease.</p> 

LIVESTOCK - POULTRY

Our poultry vaccine portfolio consists of a significant range of live and inactivated vaccines for broilers, layers and breeder hens, providing protection against the most critical viral and bacterial diseases like avian influenza, infectious bronchitis, Newcastle disease, infectious bursal disease, egg drop syndrome and avian coryza. This portfolio of preventive products helps producers worldwide to provide safe, affordable, abundant and sustainable high-quality poultry meat and eggs.

Indications	Brand Names	Active Ingredients	
– Various viral and bacterial diseases in poultry	GALLIMUNE® GALLIVAC® VOLVAC®	<i>polyvalent attenuated live and inactivated vaccine containing antigens for vaccination against avian influenza, Newcastle disease, avian coryza, egg drop syndrome, infectious bronchitis, infectious bursal disease, gallibacterium anatis</i>	For vaccination of healthy chickens against diseases caused by the included antigens. For the prevention of the most common diseases in broiler chickens and diseases responsible for losses in egg production in layers.
			
– Infectious bursal disease (IBD), Marek's disease (MD) and Newcastle disease (ND), or infectious laryngotracheitis (ILT)	VAXXITEK® HVT + IBD VAXXITEK® HVT + IBD + ND VAXXITEK® HVT + IBD + ILT	<i>serotype 3, live Marek's disease vector, live vHVT013-69 recombinant virus which contains a gene of IBD virus and, for the trivalent vaccines, a gene of IBD virus and of ND or ILT viruses (and diluent)</i>	The vaccination of 18- to 19-day-old embryos or one-day-old chickens is effective against standard and variant infectious bursal disease, Marek's disease and for the trivalent vaccines against Newcastle disease or infectious laryngotracheitis.
			
– Newcastle disease (ND)	AVINEW®	<i>live Newcastle disease virus, VG/GA-AVINEW strain</i>	In broiler chickens from one day of age: active immunization against Newcastle disease to reduce mortality and clinical signs associated with the disease. In future layer and future breeder pullets from the age of four weeks: priming for active immunization against egg drop caused by Newcastle disease before vaccination with an inactivated vaccine (strain Ulster 2C) prior to the beginning of lay.
			
– Marek's disease	PREVEXXION® RN PREVEXXION® RN+HVT PREVEXXION® RN+HVT+IBD PREVEXXION® RN & VAXXITEK® HVT+IBD	<i>live herpes virus chimera, serotype 1, strain RN1250 (and diluent)</i>	The vaccination of 18- to 19-day-old embryos and/or one-day-old chickens is recommended to protect against the very virulent Marek's disease.
			
– Newcastle and Marek's diseases	NEWXXITEK™ HVT + ND	<i>live Marek's disease vectored virus, serotype 3, that contains a gene insert from Newcastle disease (and diluent)</i>	The vaccination of 18- to 19-day-old embryos or one-day-old chickens is effective against Marek's disease and Newcastle disease.
			




VETERINARY PUBLIC HEALTH (VPH)

We work with governments and private partners toward improving control and eradicating diseases such as foot-and-mouth disease, bluetongue virus and rabies.

Our foot-and-mouth (FMD) vaccines portfolio including AFTOPOR®, AFTOVAXPUR® and AFTOVAX® provides active immunization of cattle, sheep or pigs to reduce clinical signs and mortality following exposure to FMD virus.

RABISIN® is an inactivated vaccine against rabies, available as a clear colorless suspension for injection. RABORAL V-RG® is an oral recombinant vaccine that protects wildlife against rabies.

BTVPUR ALSAP® is a multi-strain vaccine used for active immunization of sheep and cattle to prevent viremia and to reduce clinical signs caused by bluetongue virus.

Indications	Brand Names	Active Ingredients	
– Foot-and-mouth disease (FMD)	AFTOPOR® AFTOVAXPUR® AFTOVAX® AFTOVAXPUR® DOE	<i>mix of inactivated FMD virus antigens with the widest range of vaccine strains</i>	<p>AFTOPOR® and AFTOVAXPUR® are highly potent vaccines with purified antigens, recommended in endemic or emergency situations. Both have potential marker properties that allow differentiation between infected and vaccinated animals (DIVA).</p> <p>AFTOVAX® is a low-cost and effective vaccine profile for cattle and sheep, suitable for mass vaccination in endemic situations.</p> <p>AFTOVAXPUR® DOE is suitable for emergency situations only.</p> 
– Rabies	RABISIN® RABORAL V-RG®	<i>Rabisin: inactivated and adjuvanted rabies virus; Raboral V-RG: vaccinia-vectored rabies vaccine</i>	<p>RABISIN® is used for the active immunization of dogs and cats to reduce mortality and clinical signs due to rabies infection. Immunity has been demonstrated one month after vaccination and has been shown to persist up to the first booster dose, (1 year after primary vaccination) and up to 3 years following booster vaccination.</p> <p>RABORAL V-RG® is an oral rabies recombinant vaccine that protects wildlife (raccoons, foxes and coyotes) against rabies, thereby reducing the risk of exposure to rabies for humans and domestic animals. It is only sold to government agencies conducting rabies control programs.</p> 
– Bluetongue	BTVPUR ALSAP®	<i>mix of inactivated bluetongue virus</i>	<p>Active immunization of sheep to prevent viremia and to reduce clinical signs caused by bluetongue virus serotypes 1, 2, 4 and/or 8 (combination of maximum 2 serotypes).</p> <p>Active immunization of cattle to prevent viremia caused by bluetongue virus serotypes 1, 2, 4 and/or 8, and to reduce clinical signs caused by bluetongue virus serotypes 1, 4 and/or 8 (combination of maximum 2 serotypes).</p> <p>Onset of immunity has been demonstrated three weeks (or five weeks in sheep for BTV-2) after the primary vaccination course for BTV-1, BTV-2 (cattle), BTV-4 and BTV-8 serotypes.</p> 

COMPANION ANIMALS - HORSE

Our equine portfolio is highly comprehensive, covering the key aspects of equine health, including parasite control, vaccination, and the management of chronic diseases. We have a range of flagship products for the treatment of colic, joint disease, and respiratory disease, the latter two categories being recently enhanced with the addition of new innovative products. We also have a line of nutraceuticals which can be bought without prescription.

PRASCEND® is indicated for the treatment of pituitary pars intermedia dysfunction (PPID), which is also known as equine Cushing's disease. Clinical signs of PPID are hypertrichiosis, laminitis, change in body conformation and lack of performance. Treatment with PRASCEND® is life-long.

VETERA® vaccines are the first US vaccine portfolio to include multiple convenient combinations of disease protection for horses from as young as four months of age. The vaccines protect against as many as nine infectious organisms including influenza, herpes, the West Nile virus, tetanus and others. This enables customized protection for each horse with limited needle injections.







GASTROGARD®/ULCERGARD® is indicated for the treatment and prevention of equine gastric ulcers, which is one of the most common diseases in horses. GASTROGARD® is supplied in an easy-to-use oral paste form and has been the first choice for treatment of gastric ulcers since its launch in 1999. ULCERGARD® in the USA is the preventive of choice for horses with an increased risk of developing gastric ulcers.

EQVALAN®/ZIMECTERIN® contains ivermectin, a leading ingredient that controls a wide variety of important internal parasites, including bots and benzimidazole-resistant small strongyles, in an easy-to-administer oral paste. EQVALAN®/ZIMECTERIN® is approved for adult horses and foals as young as six weeks of age.

EQVALAN® DUO/GOLD, ZIMECTERIN® GOLD combines ivermectin with praziquantel, an ingredient that specifically controls tapeworms.

ARTI-CELL® forte is the world's first licensed veterinary stem cell product which is a ready-to-use intra-articular injection of chondrogenic induced mesenchymal cells for the treatment of lameness linked to non-infective joint inflammation in horses. ARTI-CELL® forte is one of the latest additions to the equine portfolio and is available in a range of countries within the EU as of 2019. Further approvals are expected in due course.

ASERVO® EQUIHALER® is the first inhalation product for the treatment of severe equine asthma. This product is a novel glucocorticoid pro-drug (ciclesonide inhalation solution) delivered in an inhaler specifically designed for use in horses, and implementing the Soft Mist™ technology derived from the RESPIMAT® inhalers in human pharma. This exciting new introduction gained final authorization and product availability in the EU, US and Canada in 2020; further approvals in other countries are expected in due course.

Indications	Brand Names	Active Ingredients	
– Pituitary pars intermedia dysfunction (PPID)	PRASCEND®	<i>pergolide mesylate</i>	<p>Symptomatic treatment of clinical signs associated with pituitary pars intermedia dysfunction (PPID, also known as equine Cushing's disease).</p> 
– Combination vaccine against up to nine common diseases in horses	VETERA®	<i>Eastern, Western and Venezuelan encephalomyelitis, tetanus, West Nile virus, equine herpes virus, equine influenza viruses</i>	<p>For vaccination of healthy horses as an aid in the prevention of diseases caused by the included antigens (US and Canada only).</p> 
– Equine gastric ulcers	GASTROGARD® ULCERGARD®	<i>omeprazole</i>	<p>For treatment and prevention of gastric ulcers and prevention of recurrence of gastric ulcers in horses and foals four weeks of age and older.</p> 
– Internal parasites	EQVALAN® ZIMECTERIN® EQVALAN® GOLD EQVALAN® DUO ZIMECTERIN® GOLD	<i>ivermectin</i> <i>ivermectin, praziquantel</i>	<p>For treatment and prevention of parasitic infestations in horses and donkeys due to large and small strongyles, ascarids. GOLD/DUO includes treatment against tapeworms.</p> 
– Reduction of mild to moderate recurrent lameness associated with non-septic joint inflammation in horses	ARTI-CELL® FORTE	<i>chondrogenic induced equine allogeneic peripheral blood-derived mesenchymal stem cells</i>	<p>For treatment of mild to moderate lameness linked to non-infective joint inflammation in horses. It contains stem cells which are obtained from equine blood. Stem cells can develop into other types of cells. The stem cells in the active substance (mesenchymal stem cells) are treated so that they develop into cartilage cells.</p> 
– Severe equine asthma	ASERVO® EQUIHALER®	<i>ciclesonide inhalation solution</i>	<p>For the alleviation of clinical symptoms of severe equine asthma characterized by coughing, nasal discharge, nasal flaring, increased breathing effort at rest, or abnormal lung sounds.</p> 

COMPANION ANIMALS - PETS

Our pet portfolio offers diverse solutions for some of the most important needs of canine and feline health including industry-leading parasiticides, vaccines, and therapeutics to address major chronic diseases: heart failure, kidney diseases, hypertension, epilepsy, diabetes mellitus, and osteoarthritis.

For 25 years, FRONTLINE® has been a leader in flea and tick control on dogs and cats, and is one of the most trusted brands in animal health.¹ FRONTLINE® continues to bring innovation to the category, with the recent launch of FRONTLINE TRI-ACT®, which features repellency and insecticidal efficacy on many disease-carrying flying insects and which decreases the risk of transmission of vector-borne pathogen.²

NEXGARD® contains the active ingredient afoxolaner and was the first oral medication to treat both fleas and ticks in dogs. Because of its efficacy and palatable, beef-flavored soft chew formulation, NEXGARD® is currently the best-selling pet medication in the animal health industry.³

NEXGARD SPECTRA® combines the flea and tick efficacy of afoxolaner in NEXGARD® with a broad-spectrum deworming ingredient, milbemycin oxime, in the same beef-flavored chew. NEXGARD SPECTRA® is not only effective in treating flea, tick and mite infestations, as well as gastrointestinal parasites infections, it also protects dogs against deadly parasites such as heartworm and lungworm.

HEARTGARD® PLUS contains the active ingredients ivermectin and pyrantel in a soft beef chew. When given monthly, ivermectin is effective in preventing deadly heartworm disease. Pyrantel is effective in the treatment and control of roundworms as well as hookworms. HEARTGARD® was launched in 1987 as the first monthly heartworm preventative and is still the best-selling heartworm preventative in the world.⁴

BROADLINE® offers cat owners all-in-one convenience providing confidence that their cat has the broadest possible protection. It protects cats against the broadest spectrum of internal and external parasites, including adult fleas, flea eggs, flea larvae, ticks, heartworms, hookworms, roundworms, vesicular worms and tapeworms.







VETMEDIN® is an inodilator which has become the standard of care when treating dogs with congestive heart failure caused by dilated cardiomyopathy or valvular insufficiency (mitral and/or tricuspid regurgitation). It significantly improves clinical signs and extends life expectancy in these patients. Recent studies have also shown that when used in asymptomatic cases of either dilated cardiomyopathy in Doberman pinschers or valvular insufficiency VETMEDIN® significantly delays the onset of clinical signs of congestive heart failure, a first in veterinary cardiology.

¹⁾ Data on file.

²⁾ *Babesia canis* transmitted by *Dermacentor reticulatus* ticks, *Ehrlichia canis* transmitted by *Rhipicephalus sanguineus* ticks, and *Leishmania infantum*, transmitted by phlebotomine sandflies.

³⁾ Data on file.

⁴⁾ Data on file.

Indications	Brand Names	Active Ingredients	
– Antiparasitic: canine/feline external parasites	FRONTLINE® FRONTLINE COMBO® FRONTLINE PLUS® FRONTLINE TRI-ACT® FRONTECT®	<i>fipronil</i> <i>fipronil/s-methoprene</i> <i>fipronil/permethrin</i>	<p>FRONTLINE PLUS®/FRONTLINE COMBO® was launched as an innovative combination to continue the FRONTLINE® story. It is indicated for the treatment and prevention of flea, tick, and lice infestations. It also breaks the flea life cycle by preventing the development of flea immature stages.</p> <p>FRONTLINE TRI-ACT®/FRONTECT® is indicated for the treatment and prevention of flea and tick infestations in dogs. It also provides repellent activity against mosquitoes, sandflies, and ticks, reducing the risk of transmission of vector-borne pathogens.</p> 
– Antiparasitic: canine external parasites	NEXGARD®	<i>afoxolaner</i>	<p>NEXGARD® is delivered in a highly palatable beef-flavored chew. It is indicated for the treatment and prevention of flea and tick infestations in dogs. It is also indicated for the prevention of <i>Borrelia burgdorferi</i> infections (USA), and the treatment of <i>Demodex</i>, <i>Sarcoptes</i>, and <i>Otodectes</i> mite infestations in non-US geographies.</p> 
– Antiparasitic: canine internal and external parasites	NEXGARD SPECTRA®	<i>afoxolaner</i> , <i>milbemycin oxime</i>	<p>NEXGARD SPECTRA® is delivered in a highly palatable beef-flavored chew. It is indicated for the treatment and/or prevention of flea, tick, and mite infestations. It also prevents heartworm disease, angiostrongylosis, and thelaziosis. It treats hookworm, roundworm, and whipworm infestations in dogs.</p> 
– Antiparasitic: canine internal parasites	HEARTGARD® PLUS	<i>ivermectin</i> , <i>pyrantel</i>	<p>For use in dogs to prevent canine heartworm disease by eliminating the tissue stage of heartworm larvae for a month (30 days) after infection, and for the treatment and control of roundworms and hookworms.</p> 
– Antiparasitic: feline internal and external parasites	BROADLINE®	<i>fipronil</i> , (s)- <i>methoprene</i> , <i>eprinomectin</i> , <i>praziquantel</i>	<p>Protects cats against the broadest spectrum of internal and external parasites including adult fleas, flea eggs, flea larvae, ticks, heartworms, lungworms, hookworms, roundworms, vesical worms, and tapeworms.</p> 
– Congestive heart failure	VETMEDIN®	<i>pimobendan</i>	<p>Treatment of canine congestive heart failure originating from dilated cardiomyopathy or valvular insufficiency (mitral and/or tricuspid regurgitation).</p> <p>Treatment of dilated cardiomyopathy in the preclinical stage (asymptomatic with an increase in left ventricular end-systolic and end-diastolic diameter) in Doberman Pinschers.</p> <p>Treatment of dogs with myxomatous mitral valve disease (MMVD) in the preclinical stage (asymptomatic with a systolic mitral murmur and evidence of increased heart size) to delay the onset of clinical symptoms of heart failure.</p> 

COMPANION ANIMALS - PETS (CONTINUED)

Boehringer Ingelheim has the most complete, trusted, and proven range of products and services in pain management. Choosing this portfolio gives veterinarians the freedom to tailor treatment to each patient and provides access to value-added veterinary services.

METACAM® offers an extensive range of formulations and indications, making it the complete non-steroidal anti-inflammatory drug (NSAID) for dogs, cats, and guinea pigs. It enables veterinarians to better achieve their goals in pain management and gives each owner and pet exactly the product they need. Ample long-term studies support the product's safety and efficacy and have led to multiple indications across diverse species.








The liquid formulation of METACAM® for dogs makes it easy to titrate to the lowest effective dose while the liquid formulation for cats is easy to administer. An improved dog administration syringe aimed to achieve better accuracy was introduced in 2020.

PREVICOX® was designed specifically for dogs and is the most selective veterinary COX-2 inhibitor. PREVICOX® provides safe, sustained pain relief with a fast onset of action. Long-term safety and efficacy have been established in large field studies and PREVICOX® has been shown to be more efficacious than competition in acute models of osteoarthritis.

SEMINTRA® is the first-ever licensed angiotensin receptor blocker for veterinary use. Specifically designed for cats, SEMINTRA® is the scientifically advanced treatment in one simple solution that safely and effectively harnesses the protective benefits of the cat's renin-angiotensin-aldosterone system to protect kidneys and other key organs. SEMINTRA® is available as 4mg/ml and 10mg/ml oral solution. SEMINTRA® (4mg/ml) was first launched in 2013 for the reduction of proteinuria associated with chronic kidney disease in cats. In 2018, SEMINTRA® (10mg/ml) was launched for the control (US)/treatment (EU) of feline systemic hypertension. It is the first vet-licensed product for feline hypertension in the US.

Since its launch in 2009 PROZINC® has become the proven insulin choice for feline patients and their owners for convenient management of feline diabetes. With the approval of PROZINC® for canine patients, we have the opportunity to become the first-choice solution for successful management of diabetes in both dogs and cats. Large clinical studies in Europe, the US, and Japan have confirmed that the majority of dogs can be managed with one injection of PROZINC® insulin per day – a major breakthrough for dogs, owners, and veterinarians.

Our pet vaccine product portfolio includes the PUREVAX® feline vaccines formulated to provide effective protection without the use of adjuvants, RECOMBITEK®, providing targeted protection for dogs through recombinant technology, and decades of proven efficacy and safety against rabies with RABISIN® and IMRAB®.

Indications	Brand Names	Active Ingredients	
– Pain and inflammatory diseases	METACAM®	<i>meloxicam</i>	METACAM® is used to reduce specific types of post-operative pain and inflammation as well as musculoskeletal disorders in dogs and cats. 
– Pain and inflammatory diseases	PREVICOX®	<i>firocoxib</i>	For the relief of pain and inflammation associated with osteoarthritis as well as specific types of post-operative pain in dogs. 
– Chronic kidney disease (CKD) in cats – Hypertension in cats	SEMINTRA®	<i>telmisartan</i>	Management of chronic kidney disease (CKD) and feline systemic hypertension (US and EU) in cats. 
– Diabetes	PROZINC®	<i>protamine zinc</i>	For the treatment of diabetes mellitus in cats and dogs to achieve reduction of hyperglycemia and improvement of associated clinical signs. 
– Feline vaccines portfolio	PUREVAX®	<i>feline herpes virus</i> <i>feline calicivirus</i> <i>feline panleukopenia virus</i> <i>chlamydia felis</i> <i>recombinant vectored feline leukemia virus</i> <i>recombinant vectored rabies virus</i>	PUREVAX® is the only fully adjuvant-free feline vaccine range and leverages its innovative canarypox technology for FeLV and rabies. It also offers sustained protection on rabies for up to three years. 
– Canine vaccines portfolio	RECOMBITEK®*	<i>recombinant vectored canine distemper virus,</i> <i>canine parvovirus,</i> <i>canine adenovirus type 2,</i> <i>canine parainfluenza virus,</i> <i>canine coronavirus,</i> <i>leptospira Canicola,</i> <i>leptospira grippotyphosa,</i> <i>leptospira icterohaemorrhagiae,</i> <i>leptospira Pomona,</i> <i>recombinant borrelia burgdorferi,</i> <i>bordetella bronchiseptica</i>	RECOMBITEK® features a complete line of canine vaccines including: RECOMBITEK® lyme: The only vaccine that contains OspA in a non-adjuvant formulation. RECOMBITEK® oral bordetella: Effective and safe protection made easy. 
– Rabies vaccines portfolio	RABISIN® IMRAB®	<i>inactivated and adjuvanted rabies glycoproteins</i>	Sustained rabies protection up to 3 years after first year booster. Consistently high seroconversion rate. 

* In the US and others.