

Your specialists in probiotic- and phyto-pharmaceuticals, biological APIs as well as contract manufacturing

German Group of Companies

Long-standing established biological research, highly Active Pharmaceutical Ingredients and GMP-certified production — for your success in global markets

Pharma-Zentrale was founded in 1953 and is located in Herdecke, a historic trading place and picturesque city in the heart of North Rhine-Westphalia, Germany.

Even today the company is a family business, representing a group of subsidiaries, each one a successful specialist in its particular pharmaceutical or biotechnological businesses.

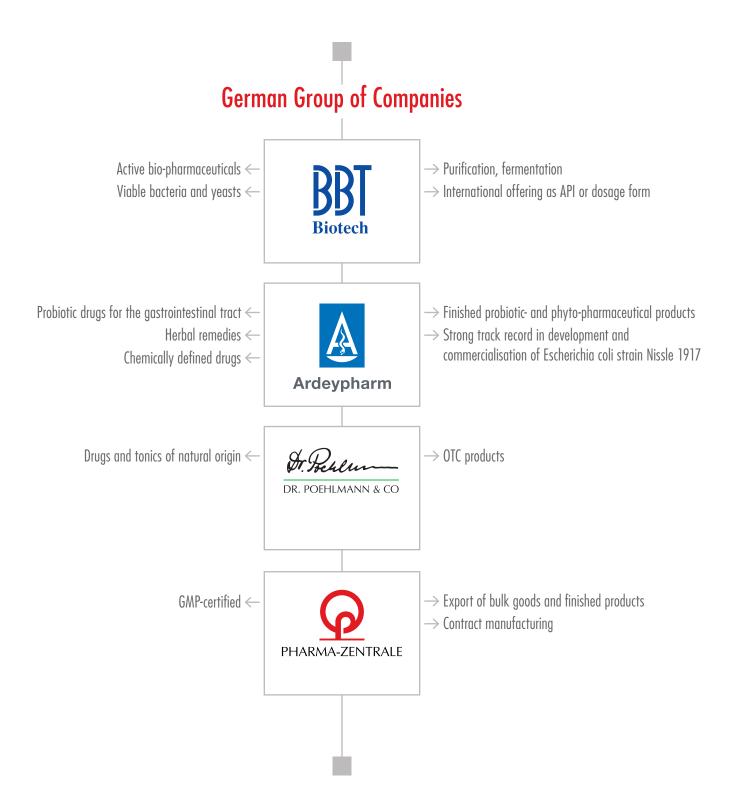
Our company group comprises BBT Biotech, Ardeypharm and Dr. Poehlmann & Co.

The services and cooperation we offer are highly valued by our customers across the globe.

We implement life-cycle management in all aspects and fields of our pharmaceutical business.

Together with our partners, we will succeed in future business and regulatory challenges.







Highly purified Active Pharmaceutical Ingredients of biological origin

BBT Biotech, located in Baesweiler, Germany, is specialised in the development, manufacturing and international sales of Active Pharmaceutical Ingredients of biological origin.

Our key technologies include up to date and well-established manufacturing systems for a sophisticated range of viable bacteria and yeasts, special protein purification and separation methods (hormones, thrombolytic drugs) — all developed in-house.

BBT Biotech provides EU-GMP-certified manufacturing. We are able to deal with international regulatory requirements.

→ Multistage production facilities in Germany: Purification and fermentation

As a specialised manufacturer, we maintain strictly separated departments dedicated to protein purification and fermentation to prevent cross-contamination.

We are inspected and audited regularly by German and international health authorities as a manufacturer of pharmaceutically active compounds.

We offer several production steps combined with perfect process technology and state-of-the-art control systems.

Fermentation capacities range from 8 up to 18,000 litres. We use various types of downstream processes. In addition we are able to provide a special separation filtration system and freeze-drying of APIs.

Pharmaceutically active enzymes, hormones and proteins are isolated with

high purity and according to applicable quality standards. State-of-the-art chromatographic and ultrafiltration equipment is handled by well-trained and experienced production staff.

Our products are isolated and purified from human, animal and non-GMO biological sources.

International product range of APIs or dosage forms

Depending on customers' needs, our product range offers active bio-pharmaceuticals as APIs or dosage forms.

All our products have to pass GMP tests according to international pharmacopoeia standards for confirmation of their identity, purity and activity.

Certificates of analysis are provided accordingly. Please ask for your specific product solution. We are prepared for customised manufacturing and for new product developments.

Corresponding documentation can be provided to enable you to register pharmaceuticals based on BBT's active substances.

Active bio-pharmaceuticals

- Hormones
- Thrombolytic drugs
- Inhibitors
- Enzymes

Viable bacteria and yeasts

- Enterobacteria
- Bifidobacteria
- Lactobacilli
- Saccharomyces

Fertility hormones, also in highly purified grade

- HCG (Human Chorionic Gonadotrophin)
- HMG (Human Menopausal Gonadotrophin)
- FSH (Follicle-Stimulating Hormone; Urofollitrophin)

Thrombolytic drugs

- Streptokinase
- Urokinase

Inhibitors

Aprotinin

Enzymes

Hyaluronidase



All the best for human health

Ardeypharm, located in Herdecke, Germany, is a leading pharmaceutical specialist in development and manufacturing of probiotic drugs. Such as the clinical evidence-based drug Mutaflor®, which contains the world's unique non-pathogenic Escherichia coli strain Nissle 1917 as API.

The Ardeypharm product range is completed by a number of chemically and herbally defined drugs.



→ Finished probiotic drugs and phyto-pharmaceuticals

We are convinced that mother nature provides many effective drugs for the benefit of human health. Ardeypharm produces and distributes in Germany a wide range of probiotic and herbal medicinal products.

The product range, offered to physicians, pharmacists and patients, includes a number of chemically defined drugs that perfectly complement various therapeutic concepts.

→ Escherichia coli strain Nissle 1917

Ardeypharm is the company that managed the transfer of Escherichia coli strain Nissle 1917 from cultivation to fermentation. Based on the established GMP fermentation of E. coli strain Nissle 1917, Ardeypharm developed and registered modern pharmaceutical dosage forms as a biological drug.

Probiotic drugs for the gastrointestinal tract

- Escherichia coli strain Nissle 1917
- Saccharomyces cerevisiae HANSEN CBS 5926 (medical synonym S. boulardii)
- Lactobacillus acidophilus

Chemically defined drugs

- Macrogol (plus electrolytes)
- Nystatin
- Tryptophan

Herbal remedies

Refer to product list (see next pages)

Established research into the health-promoting role of the intestinal microbiota

Ardeypharm was one of the first companies to become aware of the importance of intestinal microbiota (formerly known as intestinal flora) for human health. Since 1971, we have continued research and development of the E. coli strain Nissle 1917 for medical purposes. Both, the human microbiota as well as the development of biological drugs remain the focus of our research. Our R&D department works closely with hospitals and universities elsewhere around the globe.



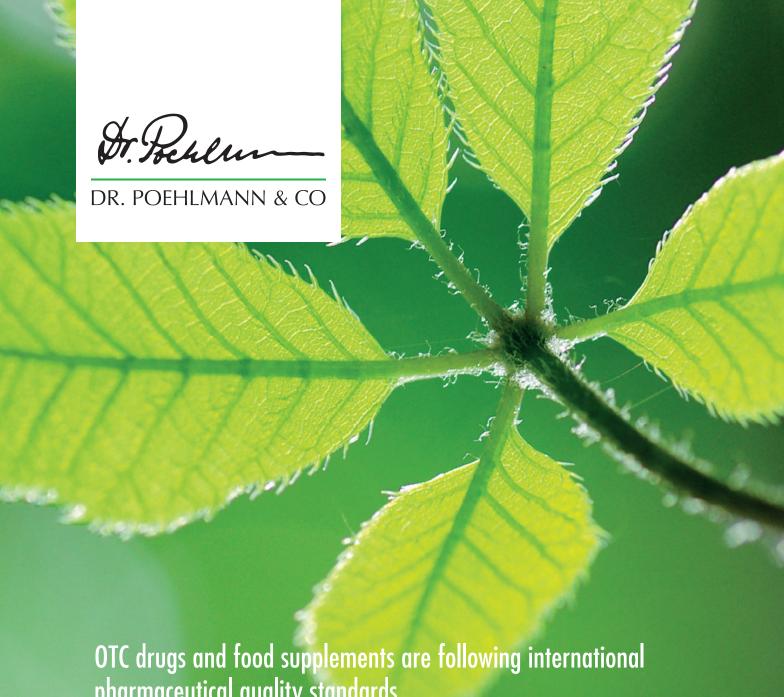












pharmaceutical quality standards

Dr. Poehlmann & Co., based in Herdecke, Germany, offers OTC drugs, tonics and food supplements. These products have all been developed and produced according to the quality standards required for pharmaceutical products.

Products with beneficial health effects are becoming more and more important alongside curative treatments. Patients are requesting herbal remedies, e.g. our ginseng energy booster.

The products of Dr. Poehlmann & Co. are well known, thanks to their high quality. Dr. Poehlmann & Co. supplies pharmacies as well as drugstores.

\rightarrow Drugs, tonics and food supplements of natural origin

The most well-known brand from Dr. Poehlmann & Co. is Tai Ginseng®.

They are all medicinal products or nutritional supplements, made from natural substances and thus meet the demands of an ever-growing target group.

The active ingredients in the products of Dr. Poehlmann & Co. are Ginseng, Hawthorn, Thyme, Valerian and Hops, B Vitamins, Phospholipids from Soy Lecithin and Pepsin.

ightarrow Tried and tested for more than 40 years: Tai Ginseng®

Dr. Poehlmann & Co. is producing Tai Ginseng® for more than 40 years — it was one of the first Ginseng products and is arguably the most well known in Germany.

In addition to Ginseng, Tai Ginseng® also contains vitamins of the B complex as well as Hawthorn. Hawthorn has been used for a long time in European herbal medicine. The balanced combination of high quality, pharmaceutical grade ingredients — Ginseng, Hawthorn and Vitamin-B complex — makes Tai Ginseng® a truly unique product in the market.









→ GMP-certified manufacturing in Germany

Pharma-Zentrale is continuously GMP-certified according the Directive 2003/94/EC.

\rightarrow Contract manufacturing

With our broad range of GMP-compliant contract manufacturing services for the biotechnology and pharmaceutical industry (APIs, dosage forms, e.g. tablets, capsules and liquids, pharmaceuticals as well as food supplements) we supply several companies all over the world.

→ Export bulkware and finished products

We supply pharmaceutical bulk (liquid, semi-solid and solid forms). We offer a full service starting from the production of APIs using fermentation (according to Part II of the EU-GMP guidelines) followed by manufacturing of finished products, from mixing the APIs with excipients to encapsulation, bottling and packaging.







Product	API	Dosage	Appearance		
HIGHLY PURIFIE	D FERTILITY HORMONES / FERTILITY H	IORMONES			
Hp-HCG / HCG	Highly purified / Human Chorionic Gonadotrophin	1,500 I.U. 2,000 I.U. 5,000 I.U. 10,000 I.U.	- Frozen bulk - Powder - Dosage form		
Hp-HMG / HMG	Highly purified / Follicle Stimulating Hormone + Human Luteinising Hormone (L.H.) (Human Menopausal Gonadotrophin)	75 I.U. 150 I.U.			
Hp-FSH / FSH	Highly purified / Human Follicle Stimulating Hormone	75 I.U. 150 I.U.	_		
THROMBOLYTICA	A				
Streptokinase	Streptokinase 750,000 I.U. 1,500,000 I.U.				
Urokinase	Urokinase	250,000 I.U. 500,000 I.U.	- Dosage form		
INHIBITORS		1			
Aprotinin	Pancreatic trypsin inhibitor	_	- Frozen bulk - Powder		
ENZYMES		1			
Hyaluronidase	Absorption of injected fluids increaser	_	- Frozen bulk - Powder		
VIABLE BACTERI	A AND YEASTS				
Bifidobacteria	-	_	Batch sizes up to several kilograms		
Enterobacteria	e.g. Escherichia coli				
Lactobacilli	e.g. Lactobacillus acidophilus				
Saccharomyces	e.g. Saccharomyces boulardii				

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PROBIOTIC DRU	GS				
Mutaflor®	E. coli strain Nissle 1917	- Ulcerative colitis in the remission stage - Chronic constipation	Hard capsules	20, 50 and 100 caps.	2 x 1 caps. a day
Mutaflor® Suspension	E. coli strain Nissle 1917	Diarrhea in newborns, infants and children Diarrhea in newborns, infants and children under tube feeding	Suspension	5 and 25 x 1 ml 5 and 25 x 5 ml	1—3 x 1 ml a day
Paidoflor®	Lactobacillus acidophilus	Small bowel disturbances, e.g. in case of constipation or diarrhea	Chewable tablets	20, 50 and 100 tab.	1—3 x 3 tab. a day
Yomogi [®]	Saccharomyces boulardii, lyophilised	Acute diarrhea (e.g. Antibiotic-associated diarrhea), Travelers' diarrhea	Hard capsules	10, 20, 50 and 100 caps.	1—2 caps. a day
Yomogi [®] 250 mg	Saccharomyces boulardii, lyophilised	Acute diarrhea	Hard capsules, gelatine-free	10, 20, 50 and 100 caps.	Children aged 6 month to 2 years: 1—2 caps. a day* Children older than 2 years, and adults: 1—2 caps. a day

CHEMICALLY DEFINED DRUGS

Adiclair®	Nystatin	Fungal infections	Tablets	20, 50 and 100 tab.	3 x 2 tab. a day
		(especially Candida)	Suspension	24 and 48 ml	3-6 x 1-2 ml a day
			Ointment 20, 50 and 100 g 3 x a da	3 x a day	
			Oral gel	25 and 50 g	4 x 1 g a day
Ardeytropin [®]	Tryptophan	Facilitates falling asleep in insomnia	Tablets	20, 50 and 100 tab.	1 x 2 tab. a day
Juniorlax®	Macrogol plus electrolytes (sodium chloride, sodium hydrogen carbonate, potassium chloride)	Chronic constipation in children aged 2 to 11 years	Powder for oral solution, single dose sachet	10, 30 and 50 sachets	2 to 6 years: 1 sachet 7 to 11 years: 2 sachets a day**
Mykotin [®]	Miconazolnitrate	Oral thrush	Oral gel	20 and 50 g	4 x 1 measuring spoon of gel a day













Product/API	API	General use	Commercial forms	Pack size	Average daily
PHYTO-PHARMA	CEUTICALS				
Ardeycholan®	Artichoke leaf dry extract	Dyspeptic disorders	Hard capsules	20, 50 and 100 caps.	3 x 1 caps. a day
Ardeyhepan®	Milk thistle fruit dry extract	Adjuvant therapy of liver diseases and to protect liver from damage	Coated tablets	20, 60 and 100 tab.	2 x 2 tab. a day
Ardeynephron®	Java tea leaves dry extract	Adjuvant therapy of minor urinary complaints	Hard capsules	20 and 50 caps.	3—4 x 2 caps. a day
Ardeysedon® Nacht	Valerian and Hop dry extract	Difficulty falling asleep due to nervousness	Coated tablets	50 and 100 tab.	1 x 1 tab. a day
Doloteffin [®]	Devil's claw root dry extract	Supportive therapy of degenerative illnesses of the musculoskeletal system	Tablets	10, 20, 50 and 100 tab.	3 x 2 tab. a day
Orgaplasma®	Ginseng root dry extract	Feeling of weakness; lack of concentration and during convalescence	Coated tablets	20, 50 and 100 tab.	2 x 2 tab. a day
Passidon [®]	Passionflower herb dry extract	Nervousness, restlessness	Hard capsules	50 and 100 caps.	2 x 2 caps. a day
Plissamur®	Horse chestnut seed dry extract	Symptoms of peripheral chronic venous insufficiency	Coated tablets	20, 50 and 100 tab.	2 x 1 tab. a day
Tai Ginseng® Pastilles	Ginseng root dry extract	Invigoration tonic, declining capacity for work and concentration	Pastilles	20 past.	3—4 pastilles daily to be sucked or chewed













Product	API	General use	Commercial forms	Pack size	Average daily
Cevitect®	Thyme herb dry extract	Cold related respiratory illness, persistent coughing, expectoration in acute bronchitis	Pastilles	30 past.	Suck 3—4 pastilles, 3—4 times daily, one after the other
Pepsin Wine	Pepsin-powder. A natural product obtained from pigs	Improves stomach function	Liquid	700 ml	20 ml with each meal (3 times daily)
Tai Ginseng®	Ginseng root dry extract/powder,	Stimulating mind and body	Liquid	500 ml	5—15 ml, 3 times daily
	hawthorn leaf and flower dry extract, vitamins	Biological energy provider, Activates natural protection against stress	Coated tablets	60 and 120 tab.	2 coated tablets, 3 times or 3 coated tablets twice daily











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