

Bestion™ Resin for Pharmaceutical and Biotechnology Application

PHARMACEUTICAL & BIOTECHNOLOGY



Ion exchange resins are widely used in pharmaceutical companies, such as in the pharmaceutical production process for the desalination of drugs, adsorption separation, purification, decolorization, neutralization and extraction of active ingredients from Chinese herbal medicines. This technology was first used in the pharmaceutical industry. It is used to extract and separate antibiotics, concentrate vitamins, and extract and purify natural medicines. With the research and discovery of drug delivery systems, ion exchange resins are gradually used in slow-release drug delivery systems and targeted drug delivery systems, mainly in The release rate of the drug in the gastrointestinal tract is controlled and used as a carrier for a targeted release system.

The resin can be used as both a component and an adjuvant of a drug, or as a water treatment agent, and is mainly used for water treatment in a pharmaceutical production process.



离子交换树脂在制药企业中被广泛应用，如在药物生产过程中被用于药物的脱盐，吸附分离、提纯、脱色、中和以及中草药有效成分的提取等，这项技术最早应用于制药工业主要是用于提取分离抗生素，浓缩维生素以及提取和纯化天然药物等，随着药物传递系统的研究和发现，离子交换树脂逐步用于缓控释给药系统和靶向给药系统，主要是指在控制药物在胃肠道的释放速度及作为载体用于靶向释放系统。

树脂既可以用作药物的组分和辅料，也可以用作水处理剂，主要用于在药物生产过程中的水处理。

Type	Typical Application
PC521	Antibiotics are recovered from natural product extraction and fermentation broth. Heparin sodium extraction and purification. 从天然产物提取和发酵液中回收抗生素,肝素钠提取与精制
PCM81	Purification of aminoglycoside antibiotics, purification of macrolide antibiotics such as tylosin of erythromycin (include its derivatives such as clarithromycin and chitinmycin). 用于氨基糖苷类抗生素纯化。大环内酯抗生素如红霉素、泰乐菌素纯化,红霉素的衍生物如克拉霉素和阿奇霉素
PC660	Lysozyme extraction, extraction and separation of aminoglycoside antibiotics, such as streptomycin, josamycin, and isopamicin. 溶菌酶提取,链霉素、交沙霉素、异帕米星等氨基糖苷类抗生素的提取分离
PC821	Purification and decolorization of aminoglycoside antibiotics, decolorization of macrolide antibiotics, recovery of clavulanic acid 氨基糖苷类抗生素的纯化脱色,大环内酯类抗生素脱色,克拉维酸的回收
PC764	Purification of beta-lactam antibiotics, often combined with BJ7505 in cephalosporin C purification beta-内酰胺类抗生素纯化,在头孢菌素 C 纯化中常与 BJ7505 联用
PC765	Purification of beta-lactam antibiotics beta-内酰胺类抗生素纯化
PC165	Extraction of aminoglycoside antibiotics such as sisomicin, tobramycin, amikacin, and enzyme extraction 西索米星、妥布霉素、丁胺卡那霉素等氨基糖苷类抗生素提取,酶提取
PC941	For various antibiotic extraction 用于多种抗生素提取
PC901	Extraction of various antibiotics such as oxytetracycline 土霉素等多种抗生素的提取
PC912	It is suitable for the removal of cationic impurities in the production of various antibiotics such as gentamicin, streptomycin and oxytetracycline. 适用于庆大霉素、链霉素、土霉素等多种抗生素生产中去除阳离子杂质
PC916	It is suitable for the removal of cationic impurities in the production of various antibiotics such as gentamicin, streptomycin and oxytetracycline. 适用于庆大霉素、链霉素、土霉素等多种抗生素生产中去除阳离子杂质
PC640	Applicable to the extraction of antibiotics such as colistin sulfate, streptomycin, gentamicin, neomycin and lysomycin 适用于硫酸盐粘杆菌素、链霉素、庆大霉素、新霉素等抗生素及溶霉素的提取
PC568	Suitable for purifying various antibiotics such as streptomycin and Oxytetracycline 适用于链霉素、土霉素等多种抗生素提纯

BJ7502	Purification of antibiotics (such as cephalosporins, etc.), extraction of steroids, enzymes, peptides, etc. 抗生素（如头孢菌素等）的纯化，类固醇、酶、多肽等的提取。
BJ7505	Purification of antibiotics (such as cephalosporins.), steroid extraction. 抗生素（如头孢菌素等）的纯化，类固醇提取
BJ7510	Extraction and purification of antibiotics, water-soluble steroids (steroids), purification and recovery of antibodies 抗生素、水溶性甾体（类固醇）提取纯化，抗体纯化回收
BJ7507	Purification of β -lactams and other small molecule antibiotics, steroid hormone extraction β -内酰胺类和其他小分子抗生素纯化，类固醇激素提取
BJ7513	Antibiotic, water-soluble steroid (steroid) purification, peptide and enzyme Extraction 抗生素、水溶性甾体（类固醇）纯化，多肽和酶提取
BJ7514	Insulin, antibiotic extraction 胰岛素、抗生素提取
BJ7506	Drug extraction process; antibiotic purification (such as β -lactam antibiotics, cephalosporins, etc.), fermentation of antibiotics, carcasses and other substances. 药物精提过程；抗生素纯化（如 β -内酰胺类抗生素、头孢菌素等），发酵液中吸附抗生素、甾体等物质。
BJ7509	The fermentation broth absorbs vitamins, antibiotics, steroids and other substances, and is purified by antibiotics. 发酵液中吸附抗生素、甾体等物质，抗生素纯化
BJ7504	Antibiotic purification (such as β -lactam antibiotics, cephalosporins, etc.), steroid hormones 抗生素纯化（如 β -内酰胺类抗生素、头孢菌素等），类固醇激素提取
BJ7520	抗生素提取；多肽纯化 Antibiotic extraction: peptide purification

维生素提取 Vitamin extraction

Type	Typical Application
PC165	Vitamin B12 extraction 维生素 B12 提取
PCM91	Pantothenic acid (vitamin B5) extraction 泛酸（维生素 B5）提取
PCM82	Pantothenic acid (vitamin B5) extraction 泛酸（维生素 B5）提取
PC998	Suitable for refining and refining sorbitol, vitamin C, mannitol, etc. 适用于山梨醇、维生素 C、甘露醇等的提炼精制



PCM83	Vitamin E purification 维生素 E 纯化
AB103, BJ7508B, J7512	Vitamin E recovery 维生素 E 回收
BJ7506	Recovering vitamins from fermentation broth 发酵液中回收维生素
BJ7502	Extraction and separation of vitamins in fermentation broth 发酵液中维生素的提取分离

氨基酸应用 amino acids Application

Type	Typical Application
PC941	For the separation and extraction of a variety of amino acids 用于多种氨基酸的分离和提取
PC901	For the separation and extraction of a variety of amino acids 用于多种氨基酸的分离和提取
PC998	Suitable for lysine extraction and purification 适用于赖氨酸提取精制
PC921	Suitable for the separation of many amino acids 适用于多种氨基酸的分离
PCM94	Suitable for the separation and extraction of amino acids 适用于氨基酸的分离和提取
PC998B	Amino acid extraction 氨基酸提取
BJ7502, BJ7505, BJ7510, BJ7507, BJ7513, BJ7504	Amino acid extraction 氨基酸提取分离

蛋白质应用 Protein Application

Type	Typical Application
BJ7505, BJ7510, BJ7507, B J7513, BJ7506, BJ7509, B J7509, BJ7520, BJ7520	Protein recovery and purification 蛋白质回收和纯化



Type	Typical Application
AP181Na	For the treatment of hyperkalemia 用于高钾血症的治疗
AP181Ca	For the treatment of hyperkalemia 用于高钾血症的治疗
AP181H	It is used as carrier for sustained release, taste masking and dose stabilization. It is often used as a sustained-release carrier for codeine, dextromethorphan, narcotine and norephedrine. 用于缓释、掩味和剂量稳定的载体，常用作可待因、左美沙芬、那可丁、去甲麻黄碱等药物的缓释载体
AP179	It can be used as an active ingredient and as a pharmaceutical carrier. It is a stabilizer for vitamin B12, and a sustained-release carrier for drugs such as nicotine. 可作为活性成分又可作为药物载体。适用于维生素 B12 的稳定剂，和尼古丁等药物的缓释载体
AP179K	For high performance disintegrants 用于高性能崩解剂
AP268	Cholestyramine resin for the reduction of cholestyramine, taste masking, and sustained release. Also useful as a bile acid sequestrant 消胆胺树脂，用于消胆胺降低，掩味，缓释。还可用作胆酸螯合剂
AP195	Can be used for the treatment of excessive gastric acid secretion 可用于胃酸分泌过多的治疗

色谱分离 Chromatographic separation

Separation of pharmaceutically active ingredients: separation of similar components such as antibiotics, amino acids, nucleotides, etc.

药物活性成分分离应用：如抗生素、氨基酸、核苷酸等相似组分的分离

固定化酶载体 **Immobilized enzyme carrier**

Type	Typical Application
ECR011,ECR012,ECR013	适用于脂肪酶负载 Suitable for lipase loading
ECR008	适合大多数酶负载，更适合脂肪酶和转氨酶 Suitable for most of the enzymes loading, more suitable for lipase and transaminase
ECR101,ECR102,ECR103	带电荷蛋白质可与树脂发生离子作用力，适合糖苷酶负载 The charged protein can interact with the ions in resin, suitable for the loading of glycosidase
ECR001,ECR002,ECR003	适合大多数酶负载，包括水解酶 Suitable for most of enzymes loading, including hydrolytic enzymes
ECR004,ECR005,ECR006,ECR007	离子和共价两种作用力，更稳定 Acting force of ions and covalency,more stable
ECR009	固载青霉素 G 酰化酶 For immobilization of penicillin G acylase
ECR010	固定化 GL-7-ACA 酰化酶，可固载分子量较大的酶，如脂肪酶 For immobilization of GL-7-aca acylase and immobilization of enzymes with higher molecular weight, such as lipase

多肽合成 **polypeptide synthesis**

Type	Typical Application
AM	Access to different peptides via amino groups 通过氨基可接入不同多肽
Merrifield	Acidic peptide synthesis 酸性多肽合成
CTC	Better reactivity 更好的反应活性
MBHA	Amino polypeptide synthesis 氨基多肽合成
Wang	Acidic peptide synthesis 酸性多肽合成
苄醇 Benzyl alcohol	
Rink 酸 Rink acid	
Rink 酰胺 Rink amide	
Rink 酰胺-MBHA Rink amide - MBHA	
磺酰氯 Sulfonyl chloride	

层析分离介质 Chromatography separates media

Type	Typical Application
Borose-A	For separation of big biological molecules, such as: virus, DNA plasmid, etc. 分离生物大分子，如：病毒、DNA、质体等
Borose-AQ	Strong base anion exchange media. High applicationable, resolution, loading capacity 强阴离子交换介质，高适用性、高分辨率、高载量
Borose-ANi	For separation and purification of His-Tag protein 高载量重组组氨酸标记蛋白质的分离和纯化