Budesonide vs Covid

https://www.iceagenow.info/simple-cheap-rapid-solution-to-the-pandemic-video/#more-32570
https://www.youtube.com/watch?v=eDSDdwN2Xcg&feature=emb_logo

Simple, cheap rapid solution to the pandemic – Video -- Dr. Richard Bartlett -- ACWT Interview 7.2.20

More than 25 million people live in Taiwan, 25 million people practically stacked on top of each other. If they practiced social distancing they'd be out in the ocean floating around. There's not enough room for them to do social distancing.

But guess how many people have died to date of the pandemic in Taiwan?

Seven! Only seven!

Only seven! (Yes, I confirmed this on worldometers.com. As of today, August 5, the number is only seven.)

Texas physician Dr. Richard Bartlett has had a 100 percent success rate with his patients, many with life-threatening co-morditities, but the media has been ignoring it.

In this video, Dr. Bartlett shares the stories people who he has treated using a steroid called budesonide, inhaled through a nebulizer. Dr. Bartlett has previously referred to his treatment as a "silver bullet" for the coronavirus. Worth watching at least the first 5 minutes.

Budesonide: That's bu as in blue, des as in dess, o as in oh, nide as in hide) – Budesonide

Only seven deaths of Covid-19 in Taiwan!

"Same situation in Japan," says Dr Bartlett. "One hundred and twenty-one million people in Japan, and they've had less than a thousand people die during the whole pandemic. In Singapore, only 12 people have died in the entire country during the whole pandemic."

What is the secret to these low death counts?

People in those countries are using an inhaled steroid called budesomide, says Dr Bartlett, who calls budesomide the "silver bullet."

"It's super cheap," say Dr. Bartlett. "It's about $200 for the entire treatment if you use cash. Many of my patients who use insurance pay nothing out of pocket."

Budesonide is an asthma medicine, says Dr Bartlett. It's a respiratory anti-inflammatory, and Covid-19 is a respiratory inflammation disease.

"And it works," says Dr Bartlett. "A hundred percent of my (Covid-19) patients are alive."You use a nebulizer machine.

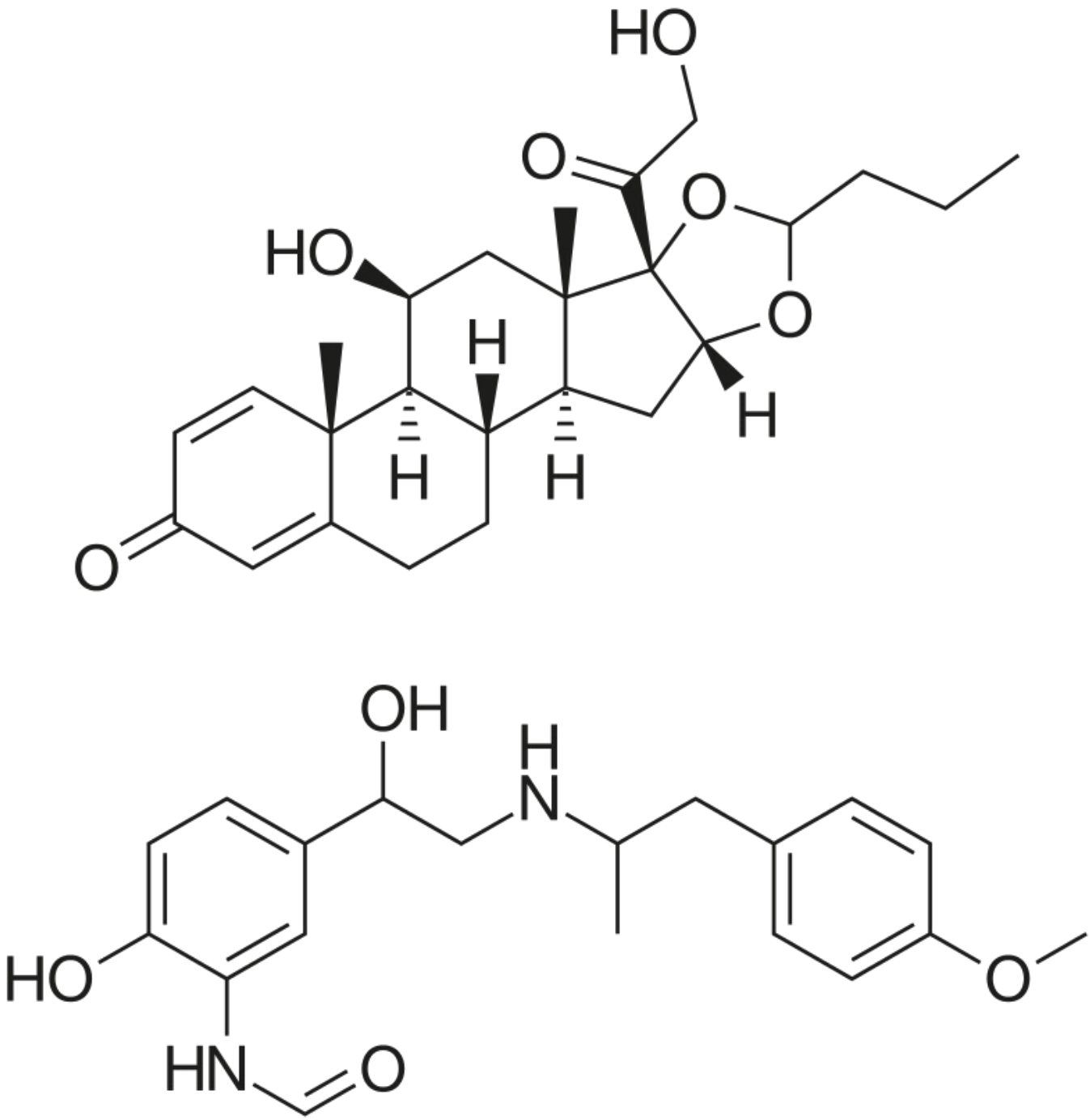
"People start feeling better after the first treatment," Bartlett adds.

Note: This was first posted on YouTube more than a month ago. But have you seen any word about this in the mainstream media?

Every person in the entire world should be made aware of this simple, cheap rapid solution to the pandemic. They should know about Dr Bartlett's "silver bullet."

Please help spread the word

Budesonide-Formoterol



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https://en.wikipedia.org/wiki/Budesonide%2Fformoterol

Budesonide/formoterol

Budesonide/formoterol, sold under the brand name Symbicort among others, is a combination medication used in the management of asthma or chronic obstructive pulmonary disease (COPD).[2] It contains budesonide, a steroid and formoterol, a long-acting β2-agonist (LABA).[2] The product monograph does not support its use for sudden worsening or treatment of active bronchospasm.[2] However, a 2020 review of the literature does support such use.[4] It is used by breathing in the medication.[2]

Common side effects include throat pain, influenza, runny nose, and a yeast infection of the mouth.[2] There were concerns that the LABA component increases the risk of death in children with asthma, however these concerns were removed in 2017.[5] Therefore, this combination is only recommended in those who are not controlled on an inhaled steroid alone.[2] There is tentative evidence that typical doses of inhaled steroids and LABAs are safe in pregnancy.[6] Both formoterol and budesonide are excreted in breast-milk.[1]

Budesonide/formoterol was approved for medical use in the United States in 2006.[7][2] It is on the World Health Organization's List of Essential Medicines, the safest and most effective medicines needed in a health system.[8] In the United States, as of 2017, the wholesale cost of an inhaler is about US$30.[9] In the United Kingdom, the cost as of 2015, was about GB£35 for a unit with 120 doses.[10] In 2017, it was the 74th most commonly prescribed medication in the United States, with more than ten million prescriptions.[11][12]

Medical uses
Maintenance

Budesonide/formoterol has shown efficacy to prevent asthma attacks.[4] It is unclear if budesonide/formoterol differs from fluticasone and salmeterol in chronic asthma.[13]

Exacerbation

The combination is approved in the United States only as a maintenance medication in asthma and chronic obstructive pulmonary disease (COPD).[2] However, a 2020 review of the literature does support use as needed during acute worsening in those with mild disease, and as maintenance followed by extra doses during worsening.[4]

Use for both maintenance and as needed treatment is also known as single maintenance and reliever therapy (SMART) and is a well-established treatment.[14][15] It has been shown to reduce asthma exacerbations that require oral corticosteroids, hospital visits better than maintenance inhaled corticosteroids alone at a higher dose, or inhaled corticosteroid at the same or higher dose with a long acting bronchodilator (LABA)), with a short-acting bronchodilator (SABA) as a reliever.[14][15] More studies using budesonide/formoterol SMART in children are needed.[15]

Side effects

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Common (up to 1 in 10 people)
- Mild throat irritation
- Coughing
- Hoarseness
- Oral candidiasis (thrush. significantly less likely if the patient rinses their mouth out with water after inhalations)
- Headache

Often mild, and usually disappear as the medication continues to be used:
- Heart palpitations
- Trembling

Uncommon (up to 1 in 100 people)
- Feeling restlessness, nervous, or agitated
- Disturbed sleep
- Feeling dizzy
- Nausea
- Tachycardia (fast heart rate)
- Bruising of the skin
- Muscle cramps

Rare (up to 1 in 1,000 people)
- Rash
- Itchiness
- Bronchospasm (tightening of the muscles in the airways causing wheezing immediately after use

of the medication, which is possibly sign of an allergic reaction and should be met with immediate medical attention)
Hypokalemia (low levels of potassium in the blood)
Heart arrhythmia

Very rare (up to 1 in 10,000 people)
Depression
Changes in behaviour, especially in children
Chest pain or tightness in chest
Increase in blood glucose levels
Taste changes, such as an unpleasant taste in the mouth
Changes in blood pressure

Other
With high doses for a long period of time.
Reduced bone mineral density, causing osteoporosis
Cataracts
Glaucoma
Slowed rate of growth in children and adolescents
Dysfunction of the adrenal gland, which affects the production of various hormones

Allergic reaction
Angioedema (swelling of the face, mouth, tongue, and/or throat. Difficulty swallowing. Hives. Difficulty breathing. Feeling of faintness)
Bronchospasm (sudden acute wheezing or shortness of breath immediately after use of medication. The patient should use their reliever medication immediately.)[16]

Society and culture
Doses

Symbicort in the United States is a metered-dose inhaler and is available in 160/4.5mcg and 80/4.5mcg per actuation.

In the European Union, Australia, Canada, Israel, Saudi Arabia and elsewhere the combination is available as a dry powder inhaler in the following doses: 50/3 (40/2.25), 100/3 (80/2.25), 100/6 (80/4.5), 200/6 (160/4.5) and 400/12 (320/9), where the larger number is the dose per actuation of budesonide (in micrograms) and the lower number the dose of formoterol (also in micrograms). [medical citation needed]
Market

Budesonide/formoterol formulation was introduced in Sweden in 2000. It was approved for use in the United States in July 2006.[7][17] It is now[when?] approved for use in at least 70 countries, yielding global sales in excess of $1 billion in 2005, and now[when?] approximately $3.7 billion per annum.[citation needed]

Budesonide/formoterol was approved for use in the European Union in April 2014.[18][19]

There are several patents related to the drug; some of them are already expired.[20] It was initially marketed by AstraZeneca.
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Patents : Therapy

WO2019036483
AQUEOUS NEBULIZATION COMPOSITION
Abstract
Compositions and methods for making and using stable, homogeneous budesonide compositions are disclosed.

WO2007099329
NEBULIZER FORMULATION
Abstract
A sterile nebulizer formulation contains formoterol and budesonide in about 2ml or less of saline and is for treatment of COPD and asthma and other airways diseases and disorders.

CA2257329

NEW METHOD
Abstract
The invention provides a novel method of treating respiratory diseases, e.g., pediatric asthma, in a continuing regimen with not more than one daily dose of the drug budesonide using a nebulizer.

(&c...)

Patents : Synthesis

RU2203953C2 [PDF]
METHOD OF ISOLATION AND PURIFICATION OF BUDESONIDE
Abstract
FIELD: medicine, pharmacy. SUBSTANCE: invention relates to method of isolation and purification of budesonide that is highly effective hormonal broncholytic agent. Isolation of crude budesonide from cultural fluid is carried out at pH value 2-2.5 and budesonide is extracted from precipitated mixture of steroid and cultural biomass with ethyl acetate in the ratio budesonide : ethyl acetate = 1 : (20-28), respectively. Recrystallization of budesonide is carried out after preliminary soaking crude budesonide in ethyl acetate in the ratio = 1 : (1.9-2.1), respectively. Proposed method of isolation and purification of budesonide allows to obtain budesonide satisfying for all requirements of pharmacopoeia article, to reduce ethyl acetate consumption by 8-10 times, to enhance the yield of pharmacopoeia budesonide by 8-9%. EFFECT: improved method of isolation and purification of budesonide.

CN102060906A [PDF]
Preparation method of R budesonide
Abstract
The invention relates to the field of medicinal chemistry, in particular to a preparation method of new R budesonide, which is characterized in that a budesonide product is synthesized by carrying out microwave catalytic reaction on the 16-alpha hydroxyl prednisolone and n-butanal in the presence of a mixed catalyst, wherein the content of the R budesonide is more than 95 percent.

CN103694306A [PDF]
Method for preparing R-isomer by using S-isomer of budesonide
Abstract
The invention discloses a method for preparing an R-isomer by using an S-isomer of budesonide. The method comprises the steps: enabling budesonide and acetic anhydride to be subjected to esterification reaction to obtain budesonide acetate; then, carrying out oxidative ring cleavage under the action of a strong oxidant to obtain 16-alpha hydroxyprednisonlone acetate; and condensing butyraldehyde and the 16-alpha hydroxyprednisonlone acetate to obtain budesonide acetate, and hydrolyzing to obtain R-budesonide. The method disclosed by the invention is high in conversion rate, high in yield and capable of effectively converting the S-isomer of the budesonide into the
R-isomer.

CN110105420A [PDF]
Synthesis method of budesonide impurity EP-ZG
Abstract
The invention provides a synthesis method of a budesonide impurity EP-ZG. The synthesis method comprises the steps that budesonide serves as a raw material and is dissolved in an organic solvent, andthen a metal catalyst is added, so that the budesonide and hydrogen are subjected to a reduction reaction to generate the impurity EP-ZG. The synthesis method is simple in process route, convenient tooperate, good in selectivity and high in yield; the synthesized budesonide impurity EP-ZG can serve as a reference substance for detecting and studying the budesonide and be applied to quality control over the budesonide and preparations related to the budesonide to control the purity of budesonide active pharmaceutical ingredients or preparations thereof.

CN102477058A [PDF]
New 16,17-dihydroxy intermediate for preparing budesonide
Abstract
A new 16,17-dihydroxy intermediate for preparing budesonide, a compound shown in formula (I), a method for synthesizing the compound shown in formula (I) by using a compound shown in formula (II), and a method for synthesizing budesonide by using the compound shown in formula (I).

CN110078785A [PDF]
Synthesis method of budesonide impurity EP-ZE
Abstract
The invention provides a synthesis method of a budesonide impurity EP-ZE. According to the synthesis method, firstly, ZNA-3 is taken as a raw material and oxidized under the condition of an oxidant toproduce a compound EP-ZE-IM1; then, the compound EP-ZE-IM1 and n-butyl aldehyde are subjected to a reaction under the catalysis action of acid to produce a compound EP-ZE-IM2; finally, the compound EP-ZE-IM2 is taken as a material and subjected to hydrolysis under the alkaline condition to produce EP-ZE. The synthesis method adopts a simple process route and is convenient to operate, good in selectivity and high in yield; the synthesized budesonide impurity EP-ZE can serve as a reference substance for detection and study of budesonide and is applied to quality control of budesonide and related preparations to control the purity of raw materials or preparations of budesonide.

CN110078784A [PDF]
Synthesis method of budesonide impurity USP-Z1
Abstract
The invention provides a synthesis method of a budesonide impurity USP-Z1. According to the synthesis method, firstly, budesonide is taken as a raw material and subjected to a reaction with butyryl chloride or butyric anhydride under the condition of an organic solvent and an acid-binding agent to produce a compound USP-Z1-IM1; then, the compound USP-Z1-IM1 is dissolved in the organic solvent, anoxidant is added, oxidation is performed, and the impurity USP-Z1 is produced. The synthesis method adopts a simple process route and is convenient to operate, good in selectivity and high in yield; the synthesized budesonide impurity USP-Z1 can serve as a reference substance for detection and study of budesonide and is applied to quality control of budesonide and related preparations to control the purity of raw materials or preparations of budesonide.

EP0994119A1 [PDF]
Stereoselective process for the preparation of the 22R epimer of budesonide
Abstract
The present invention is directed to a stereoselective process for the preparation of the C-22 R epimer of budesonide, having a purity higher than 90%, comprising the following steps: a) stereoselective transketalisation of 9 alpha -bromo-desonide or 9 alpha -iodo-desonide, by reaction with butyraldehyde in the presence of a halohydric acid selected from between aqueous HBr and Hl, to give 9 alpha -bromo-budesonide or 9 alpha -iodo-budesonide; b) treatment of 9 alpha -bromo-budesonide or 9 alpha -iodo-budesonide from step a) with a dehalogenating agent.

CN102477065A [PDF]
Novel 16, 17-ketal intermediate for preparing budesonide
Abstract
The invention provides a novel 16, 17-ketal intermediate for preparing budesonide and discloses a compound of a formula (III), a method for synthesizing the compound of the formula (III) by a compound of a formula (I) and a method for synthesizing budesonide by the compound of the formula (III).

EP2108653A1 [PDF]
Process for preparing budesonide
Abstract
A process is described for preparing budesonide which comprises the steps of: a) preparing an aqueous hydrochloric acid solution; b) reacting 16±-hydroxyprednisolone and butyraldehyde within the solution prepared in step a), in an inert atmosphere; c) quenching the reaction of step b) with water. The process of the invention enables the ratio between the A and B epimers of budesonide to be controlled.

CN103275168A [PDF]
Method for preparing budesonide
Abstract
The invention belongs to the field of chemical synthesis of medicaments, and in particular relates to a method for preparing budesonide. The method comprises the following steps of: selecting 16alpha-hydroxyprednisolone compound as a raw material, performing a condensation reaction on n-butanal and 16alpha-hydroxyprednisolone at the temperature of between 20 DEG C below zero and 25 DEG C in a mixed solution of an organic solvent I and an inorganic acid to obtain a crude budesonide product, and refining and purifying the crude product to obtain the budesonide finished product, wherein, the adding ratio of the 16alpha-hydroxyprednisolone to the n-butanal is 20g: (4-12)ml. The method has the advantages that the condensation reaction condition is mild, the

operation is simply and conveniently carried out, the yield of the product is high, the high performance liquid chromatography (HPLC) purity of the crude budesonide product is high, the ratio of S isomer is high, and the refined finished product can simultaneously meet the requirements of pharmacopeias of Europe, America and the like.

CN101279997A [PDF]
Novel preparation of budesonide
Abstract
The invention in particular relates to a new method to prepare budesonide, belonging to medicinal synthesis. The method simplifies production process through repeated tests and experiments, greatly improves yield, reduces prodiction cost and works out the optimum temperature, time and solvent for the reaction; the conditions during the reaction are easy to realize; therefore the method is applicable to large-scale industrial production to produce budesonide.

CN105061549A [PDF]
Budesonide preparing method
Abstract
The invention discloses a budesonide preparing method. Prednisone I and acetic anhydride II react to produce 17,21-diacetoxy-1,4-pregnane diene-3,11,20-triketone III, the III is degreased in an anhydrous solvent to obtain 21-acetoxyl group-1,4,16-pregnane diene-3,11,20-triketone IV, the IV is oxidized to obtain 16alpha,17alpha-dyhydroxy-21-acetoxyl-1,4-pregnane diene-3,11,20-triketone V, the V and n-butyl aldehyde VI are condensed to obtain 16alpha,17alpha-22(R,S) propyl methylenedioxy-21-acetoxyl group-1,4-pregnane diene-3,11,20-triketone VII, the VII is reduced to obtain 16alpha,17alpha-22(R,S) propyl methylenedioxy-11beta-hydroxyl-21-acetoxyl group-1,4-pregnane diene-3,20-diketone VIII, the VIII is subjected to base catalysis to obtain budesonide IX. The budesonide preparing method is suitable for industrial production.

CN107778344A [PDF]
Budesonide preparation method
Abstract
The invention provides a full-novel synthetic route for preparing budesonide. According to the full-novel synthetic route, utilized raw materials have lower cost and more easiness in obtaining. The synthetic route comprises the steps of hydroxylating reaction raw materials and protecting, then selectively oxidizing five-membered ring double bonds, bromizing six-membered ring double bonds, reducingto remove bromine atoms, removing a protecting group and reacting with n-butanal to obtain a budesonide product. A reaction process has easiness in operation, yields of all the steps are higher, obtained products have higher purities, byproduct generation is effectively avoided, production cost is reduced, and industrial production is facilitated.

CN103665093A [PDF]
Preparation method of (R)-budesonide
Abstract
The invention relates to a preparation method of adrenocortical hormone agents, and particularly discloses a preparation method of (R)-budesonide. 11beta,21-dihydroxy-16alpha,17- [(1-methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione is taken as an initial raw material, and the budesonide (R-isomer) is obtained through exchange and splitting. The preparation method of the (R)-budesonide is simple in process, high in yield and suitable for industrial production.

CN101717428A [PDF]
Method for synthesizing budesonide
Abstract
The invention relates to a method for synthesizing budesonide, which comprises the following steps of: adding 16 alpha-hydroxy hydroprednisone shown in a formula (I) and n-butanal into acidic ionic liquid shown in a formula (II) to perform reaction for 1 to 10 hours at the temperature of between 10 and 100 DEG C; and after the reaction is finished, performing subsequent treatment on the reaction liquid to obtain the budesonide shown in a formula (III), wherein the quantity ratio of the 16 alpha-hydroxy hydroprednisone to the n-butanal is 1 to 2-5; the mass ratio of the 16 alpha-hydroxy hydroprednisone to the acidic ionic liquid is 1 to 1-10; and in the acidic ionic liquid, R is C1 to C10 alkyl or substituted alkyl, and the substituent group is sulfonic acid group or carboxyl, and L is HSO42-, COO-, BF4-, BF6-, AlCl4- or CF3SO3-. The method for synthesizing the budesonide has the advantages of easy operation, high capacity, good efficiency, little three wastes, convenient subsequent treatment and reusable ionic liquid, which is an economical and practical environmentally-friendly technique.

CN101863952A [PDF]

Preparation method of budesonide

Abstract

The invention discloses a preparation method of budesonide. The budesonide is prepared sequentially through the following steps of: carrying out an esterification reaction on a starting material and acetic anhydride, wherein the starting material is prednisolone; carrying out a degreasing reaction in the presence of a catalyst which can be alkali or an alkali metal salt ; carrying out an oxidizing reaction with potassium permanganate in acid environment; carrying out an ester exchange reaction with alcohol in alkaline environment; carrying out a condensation reaction with n-butanal, and the like. In the preparation method, appropriate catalysts are added in the reactions, and reaction conditions are appropriately controlled so as to achieve the purposes of increasing the reaction rates inall the steps and improving the yield of intermediate products, and the product quality conforms to the standard of the European Pharmacopoeia. Meanwhile, all the steps have moderate reaction condition and easy control, low energy consumption, high product yield, small pollution, easy reaction raw material obtaining and low production cost.

CN107021992A [PDF]

Synthetic method for budesonide intermediate, namely, budesonide-17-acetic ester

Abstract

The invention relates to the field of pharmacy, and discloses a synthetic method for a budesonide intermediate, namely, budesonide-17-acetic ester. The synthetic method comprises the following steps: (1) synthesis of D1: synthesizing 1.0g of D0, 3 to 5mL of THF (Tetrahydrofuran), 0.9 to 1.1mL of triethyl orthoacetate, 0.007 to 0.009g of p-toluenesulfonic acid monohydrate, 0.035 to 0.045mL of pyridine, 35 to 45mL of water, and 0.12 to 0.13g of sodium bicarbonate; (2) synthesis of D2: synthesizing 1.0g of D1, 7 to 9mL of methanol, 0.60 to 0.64mL of 0.1N hydrochloric acid, 1.50 to 1.58g of 0.1N potassium hydrogen phthalate, 3.3 to 3.7g of water (A), 15 to 19g of water (B), and 7 to 9g of water (C). The synthetic method has the advantages of low synthesizing cost, and high process controllability; a prepared product has high yield and high purity.

CN103724396A [PDF]

Preparation method of R-budesonide

Abstract

The invention discloses a preparation method of an adrenal cortex hormone medicament and particularly relates to a preparation method of a high-purity R-budesonide isomer. According to the method disclosed by the invention, prednisolone is used as an original raw material and the budesonide acetic ester is prepared by cyclization, ring opening, esterification, elimination, oxidation, cyclization and hydrolysis. The method disclosed by the invention has a simple process and high yield and is suitable for industrial production.

CN109384827A [PDF]

Industrial preparation method for budesonide

Abstract

The invention relates to an industrial preparation method for budesonide. Specifically, the method comprises a step of reacting 16alpha-hydroxyprednisolone with n-butyraldehyde in an aqueous hydrochloric acid solution, dichloromethane and acetonitrile to prepare budesonid. The method of the invention has the advantages of industrial implementability, good reproducibility, etc.

WO9211280A1 [PDF]

METHOD OF OBTAINING (22R) DIASTEREOISOMER OF BUDESONIDE

Abstract

By the method according to the invention condensation of 11 beta ,16 alpha ,17 alpha ,21-tetrahydroxy-1,4-pregnadiene-3,20-dione 21-acetate with n-butyric aldehyde is carried out, in the known way, in the medium of hydrofluoric acid of concentration of 70-80 %. Theisolated crude condensation product is crystallized from ethanol and obtained 21-acetate of budesonide (22R) of at least 95 % content is hydrolyzed, and the product thus obtained is crystallized from ethyl acetate.

CN109485689A [PDF]

Preparation method of infantile asthma drug budesonide

Abstract

The invention discloses a preparation method of an infantile asthma drug budesonide. The method comprises the following step: carrying out a condensation reaction on a compound I as a raw material andn-butanal, wherein an acidic ionic liquid is taken as a catalyst and a solvent during the condensation reaction. Compared with conventional inorganic catalysts such as hydrochloric acid, sulfuric acid and perchloric acid, the reaction yield and the enantio-selectivity can be improved. The post-treatment is more convenient and simple, too. Meanwhile, a reaction of hydroxyl on locus 11 and butyraldehyde is avoided to generate side products as the ketone carboxyl on the locus 11 is

reduced first. After the condensation reaction with butyraldehyde, unnecessary S configuration can be separated andremoved first by splitting, so that the follow-up reaction and treatment costs are saved. The splitting effect of the steps is also relatively ideal. The preparation method is simple in step, high inyield, high in enantio-selectivity and low in cost, and is suitable for industrial production on a large scale.

CN105111273A [PDF]
Preparation method of budesonide
Abstract
The invention discloses a preparation method of budesonide. The preparation method comprises the following steps: (1) carrying out n-butyraldehyde aldolization for 16 alpha-hydroxyl prednisolone acetate as shown in formula (1) to obtain a budesonide crude prodct; (2) then hydrolyzing 21-acetates; and (3) collecting the product budesonide from reactant. By adopting the preparation method, the unstable midbody 16 alpha-hydroxyl prednisolone is avoided. The preparation method is easy to operate and control, and the total yield of the budesonide is greatly increased. The reaction formula is shown in the specification.

CA2065861A1
PROCESS FOR THE MANUFACTURE OF BUDESONIDE
Abstract
The present invention relates to a novel process for the manufacture of (22 R,S)-16.alpha., 17.alpha.-butylidenedioxy-11.beta., 21-dihy-droxypregna-1,4-diene-3,20-dione (I) by reacting 11.beta., 16.alpha., 17.alpha., 21-tetrahydroxypregna-1,4-diene-3,20-dione (II) with butanal, CH3CH2CH2CHO in acetonitrile with p-tolyuenesulphonic acid as a catalyst.