

Bacteriostatic Water Uses: Which Medicines Are Mixed With It (HCG, HGH & More) (2026)

Most people first meet [bacteriostatic water](#) when mixing peptides, but its labelled job is wider. This guide maps which approved medicines tell you to use it, which ship with it in the box, and which labels say never to use it.

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Bacteriostatic water uses at a glance

- **The label gives it one job.** Bacteriostatic water is sterile water with 0.9% or 1.1% benzyl alcohol, and it is indicated "*only for diluting or dissolving drugs*" for injection into a vein, muscle or under the skin, following the drug maker's instructions^[1].
- **648 FDA labels contain the exact phrase** (openFDA search; includes repackager duplicates and older labels). Two in three are anti-infectives; hormones and peptides make up 22^[2].
- **Bacteriostatic water for HCG:** Novarel names it as the recommended diluent and ships 10 mL in the box^[3]; generic hCG ships it too^[4]. Pregnyl ships a 0.56% sodium chloride solvent preserved with 0.9% benzyl alcohol, not bacteriostatic water^[5].
- **Bacteriostatic water for HGH:** only a few somatropin products use the benzyl-alcohol kind (Omnitrope 5.8 mg vials, Serostim 4 mg)^[6,7]. Others use metacresol-preserved diluents, plain water or ready-made pens.
- **Some labels say no.** Activase, Nplate, Proleukin, AmBisome and acyclovir labels rule it out^[8,9,10,11,12].
- **Never in newborns, never near the spine.** The diluent's own label rules out use in neonates and in epidural or spinal procedures^[1].

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1. What is bacteriostatic water used for? The label's answer

Start with the product's own label. The US prescribing information for Bacteriostatic Water for Injection, USP is short and specific about bacteriostatic water uses. It is a multiple-dose vial *"from which repeated withdrawals may be made to dilute or dissolve drugs for injection"*, with benzyl alcohol at 9 mg/mL (0.9%) or 11 mg/mL (1.1%) and a pH of 5.7^[1].

The label allows	The label rules out
Dissolving a powdered drug (reconstitution) before an injection into a vein (IV), muscle (IM) or under the skin (SC)	Newborns: <i>"solutions containing benzyl alcohol must not be used in this patient population"</i> ; use preservative-free sterile water instead
Diluting a liquid drug to the strength its maker specifies	Epidural or spinal anesthesia procedures
Repeated withdrawals from one vial (that is what the preservative is for)	Fluid replacement: it is not a drip or a hydration fluid
Only <i>"according to instructions of the manufacturer of the drug to be administered"</i>	IV use on its own: plain bacteriostatic water in a vein <i>"may result in hemolysis"</i> (burst red blood cells); it must be made roughly isotonic first

All quotes: Bacteriostatic Water for Injection, USP label^[1]. The same label adds that some drugs are incompatible with a benzyl-alcohol vehicle and says to *"consult with pharmacist"*.

That last rule is why the rest of this guide exists. Whether bacteriostatic water is right for a medicine is decided by that medicine's label, not by the water. The next two sections read those labels. For how it differs from sterile water and saline, see [bacteriostatic vs sterile water vs saline](#).

2. Bacteriostatic water uses, drug by drug: the label chart

We read the current US prescribing information on DailyMed for 28 medicines that mention bacteriostatic water or carry a benzyl-alcohol diluent. The table quotes the line that matters in each label. Figure 1, after the table, sorts the 21 that use it, or a similar preserved diluent, into four questions: does the label list it, does the box include a preserved diluent, does the label limit it, and does it tell you to switch to a preservative-free diluent for newborns? The 7 that rule it out are in section 3.

How we built this: we downloaded every FDA label containing the phrase "bacteriostatic water" from openFDA^[2], then opened the current DailyMed version of each product shown and copied the exact line. Labels change; check the one in your box. Brand names identify products only.

Medicine (use)	What the label says	Label line
Novarel (hCG, fertility)	Recommended diluent; 10 mL vial in the box	<i>"The recommended diluent for reconstitution is Bacteriostatic Water for Injection preserved with benzyl alcohol 0.9%."</i> ^[3]

Medicine (use)	What the label says	Label line
Gonal-f multi-dose (FSH, fertility)	1 mL (450 IU vial) or 2 mL (1050 IU vial), prefilled syringe supplied	"Dissolve the contents of one Multi-Dose vial (450 International Units) with 1 mL Bacteriostatic Water for Injection (0.9% benzyl alcohol), USP." ^[13]
Egrifta WR (tesamorelin)	Only the supplied 30 mL bottle; Egrifta SV uses sterile water instead ^[14]	"Use only the diluent provided, Bacteriostatic Water for Injection, USP, to reconstitute EGRIFTA WR." ^[15]
Enbrel multi-dose vial (etanercept)	1 mL supplied diluent syringe	"reconstituted aseptically with 1 mL of the supplied Sterile Bacteriostatic Water for Injection, USP (0.9% benzyl alcohol)" ^[16]
Myalept (metreleptin)	Either; preservative-free water for newborns and infants	"MYALEPT can be reconstituted aseptically with 2.2 mL of sterile Bacteriostatic Water for Injection (BWFI), USP (0.9% benzyl alcohol), or with 2.2 mL of sterile Water for Injection (WFI)." ^[17]
Leukine (sargramostim)	Either; sterile water only for neonates and infants	"Reconstitute with either Sterile Water for Injection, USP (without preservative) or Bacteriostatic Water for Injection, USP (0.9% benzyl alcohol)" ^[18]
Caverject (alprostadil)	1 mL diluent, bought separately	"1 mL of the diluent (bacteriostatic water for injection)" listed under supplies "Not Supplied" ^[19]
Ogivri 420 mg (trastuzumab biosimilar)	20 mL supplied; sterile water if allergic to benzyl alcohol. Herceptin itself now uses sterile water for its 150 mg vial ^[20]	"Reconstitute each 420 mg vial of Ogivri with 20 mL of Bacteriostatic Water for Injection, USP (BWFI), containing 0.9% to 1.1% benzyl alcohol" ^[21]
Solu-Medrol (methylprednisolone)	Its own diluent or bacteriostatic water; preservative-free packs exist	"Use only the accompanying diluent or Bacteriostatic Water For Injection with Benzyl Alcohol when reconstituting SOLU-MEDROL." ^[22]
Solu-Cortef (hydrocortisone)	Up to 2 mL per 100 mg vial	"adding not more than 2 mL of Bacteriostatic Water for Injection or Bacteriostatic Sodium Chloride Injection" ^[23]
Ceftriaxone (IM antibiotic)	Listed in the IM stability table	"Bacteriostatic Water + 0.9% Benzyl Alcohol" (100 mg/mL row) ^[24]
Ampicillin (IM antibiotic)	Sterile or bacteriostatic water for IM use	"Dissolve contents of a vial with the amount of Sterile Water for Injection, USP, or Bacteriostatic Water for Injection, USP" ^[25]
Invanz, Cubicin RF, Cancidas (IV anti-infectives)	One of several allowed diluents	"CUBICIN RF must be reconstituted within the vial only with either Sterile Water for Injection or Bacteriostatic Water for Injection." ^[26] ; Invanz ^[27] ; Cancidas ^[28]
Vecuronium (anesthesia)	Allowed, not for newborns	"compatible in solution with: bacteriostatic water for injection (NOT FOR USE IN NEWBORNS)" ^[29]
Polivy (lymphoma)	One of four diluents	Lists "Bacteriostatic Water for Injection, USP" alongside sterile water and two saline strengths ^[30]

Bacteriostatic water uses: what 21 labels say

Independent reading of current US prescribing information, October 2026. Not a dosing guide.

	Label lists bacteriostatic water	Box includes a preserved diluent	Label says do not use it	Newborns: preservative- free only
HORMONES				
Novarel (hCG)	●	●	·	●
Chorionic gonadotropin, generic (hCG)	●	●	·	●
Pregnyl (hCG), own saline solvent	·	○	·	●
Gonal-f multi-dose (FSH)	●	●	·	·
Omnitrope 5.8 mg vial (HGH)	●	●	·	●
Serostim 4 mg (HGH)	●	●	·	●
Egrifta WR (tesamorelin)	●	●	·	·
Myalept (metreleptin)	●	·	·	●
Caverject (alprostadil)	●	·	·	●
BIOLOGICS & CANCER				
Enbrel multi-dose vial	●	●	·	·
Ogivri 420 mg (trastuzumab)	●	●	·	·
Leukine (sargramostim)	●	·	·	●
Leucovorin calcium	●	·	○	·
HOSPITAL DRUGS				
Solu-Medrol (methylprednisolone)	●	○	·	●
Solu-Cortef (hydrocortisone)	●	·	·	·
Vecuronium	●	·	·	●
Ceftriaxone (IM)	●	·	·	·
Ampicillin (IM)	●	·	·	·
Invanz (ertapenem)	●	·	·	·
Cubicin RF (daptomycin)	●	·	·	·
Candidas (caspofungin)	●	·	·	·

Filled = yes. Open circle = partly. Pregnyl ships a 0.56% sodium chloride solvent preserved with 0.9% benzyl alcohol, not bacteriostatic water. Solu-Medrol includes its own diluent in some packs. Leucovorin: sterile water above 10 mg/m². A dot (·) means the label says nothing on that point, not that it is safe.

Source: DailyMed labels (set IDs in the Sources list), read 13 October 2026.

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Figure 1. The bacteriostatic water uses chart. Each dot comes from a quoted line in that product's current label (table above). Source: DailyMed, read 13 October 2026.

3. Medicines whose labels say no

Some medicines are damaged by the preservative. Others must not carry benzyl alcohol into certain patients. These labels rule bacteriostatic water out, fully or in part.

Labels that rule bacteriostatic water out

× = fully ruled out; open circle = only one kind ruled out.

Medicine	Rules out	Reason the label gives
Activase / Cathflo (alteplase)	× Bacteriostatic water	None given; sterile water instead
Nplate (romiplostim)	× Any bacteriostatic diluent	None given
Proleukin (aldesleukin)	× Bacteriostatic water or 0.9% saline	Increased aggregation (2019 label)
AmBisome (amphotericin B)	× Any bacteriostatic agent	May cause precipitation
Acyclovir for injection	× Benzyl alcohol or paraben kinds	None given
Ganciclovir for injection	○ Paraben-preserved kind only	None given
Botox Cosmetic	× All but preservative-free saline	Label specifies the diluent

Source: current DailyMed labels, read 13 October 2026; Proleukin reason from its June 2019 label.

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Figure 2. Labels that rule bacteriostatic water out. Full quotes in the table below. Source: DailyMed.

Medicine	Label line	Why, where the label says
Activase and Cathflo Activase (alteplase, clot-buster)	"Do not use Bacteriostatic Water for Injection, USP." ^{[8][31]}	Not stated; both are mixed with sterile water instead
Nplate (romiplostim)	"Do not reconstitute or dilute with Bacteriostatic Water for Injection, USP or dilute with Bacteriostatic Sodium Chloride Injection, USP." ^[9]	Not stated
Proleukin (aldesleukin)	"Do not reconstitute or dilute Proleukin with Bacteriostatic Water for Injection, or 0.9% Sodium Chloride Injection." ^[10]	Older label: "because of increased aggregation" ^[32]
AmBisome (amphotericin B)	"must be reconstituted using Sterile Water for Injection, USP (without a bacteriostatic agent)" ^[11]	"the presence of a bacteriostatic agent in the solution, may cause precipitation"
Acyclovir for injection	"DO NOT USE BACTERIOSTATIC WATER FOR INJECTION CONTAINING BENZYL ALCOHOL OR PARABENS." ^[12]	Not stated
Ganciclovir for injection	"Do not use bacteriostatic water for injection containing parabens." ^[33]	Only the paraben-preserved kind is ruled out
Leucovorin (high doses)	"when doses greater than 10 mg/m2 are administered, leucovorin calcium for injection should be reconstituted with Sterile Water for Injection" ^[34]	"Because of the benzyl alcohol contained in Bacteriostatic Water"

Medicine	Label line	Why, where the label says
Botox Cosmetic	"Preservative-free 0.9% Sodium Chloride Injection, USP Only" ^[35]	Label specifies saline, not water, and no preservative

The newborn rule runs through many labels. Leukine, Myalept, Zomacton and the diluent itself all tell you to switch to a preservative-free diluent for neonates or infants^[18,17,36,1]. Solu-Medrol says its benzyl-alcohol-preserved forms are "*contraindicated for use in premature infants*"^[22]. Allergy and side effects are outside the scope of this guide.

4. Bacteriostatic water for HCG

hCG is the clearest case of a medicine built around bacteriostatic water. The US hCG powders are multi-dose vials, and the preserved diluent is what makes several doses from one vial possible.

hCG product	Diluent in the box	What the label says
Novarel 5,000 or 10,000 USP units	10 mL bacteriostatic water, 0.9% benzyl alcohol	Recommended diluent. Mix with 1 mL to give the whole dose at once, or with 10 mL for several doses from the vial ^[3]
Chorionic Gonadotropin (generic) 10,000 USP units	Bacteriostatic water (10 mL vial labelled "NOT FOR USE IN NEWBORNS")	"to be reconstituted with accompanying Bacteriostatic Water for Injection and administered intramuscularly" ^[4]
Pregnyl 10,000 USP units	10 mL solvent: water, 0.56% sodium chloride, 0.9% benzyl alcohol	The label calls it a solvent, not bacteriostatic water. It is salt water preserved with the same 0.9% benzyl alcohol ^[5]

Two points follow from the labels. First, the hCG you mix is given into a muscle; all three labels describe intramuscular use^[3,4,5]. Second, if you use a different hCG product, its own label decides the diluent. Do not assume a kit's diluent can be swapped.

5. Bacteriostatic water for HGH

"HGH bacteriostatic water" is a common search, but most growth hormone brands do not use it. Figure 3, below, shows what each current US somatropin label ships with.

- **Benzyl-alcohol bacteriostatic water:** Omnitrope 5.8 mg vials come with "*1.14 mL vials of a diluent containing Bacteriostatic Water for Injection with 1.5% benzyl alcohol*"^[6]. Serostim 4 mg uses bacteriostatic water with 0.9% benzyl alcohol; its 5 mg and 6 mg vials use sterile water^[7].
- **"Bacteriostatic" does not always mean benzyl alcohol.** Zomacton 10 mg is mixed with "*Bacteriostatic Water for Injection, USP with 0.33% metacresol*", and Zomacton 5 mg with bacteriostatic sodium chloride^[36].
- **Own diluent only:** Humatrope says to use "*only the diluent syringe that accompanies the cartridge*", which is water with 0.3% metacresol and glycerin^[37]. Genotropin's two-chamber cartridge holds its own diluent^[38].
- **Nothing to mix:** Norditropin, Sogroya and Ngenla are ready-made liquid pens^[39,40,41]; Skytrofa mixes itself with preservative-free water inside a dual-chamber cartridge^[42].

Bacteriostatic water for HGH: what each brand ships with

Only a few somatotropin products use benzyl-alcohol bacteriostatic water. Most use metacresol, plain water or no mixing.

Omnitrope 5.8 mg vial	Bacteriostatic water, 1.5% benzyl alcohol (1.14 mL, in the box)
Serostim 4 mg vial	Bacteriostatic water, 0.9% benzyl alcohol
Serostim 5 mg / 6 mg vials	Sterile water (no preservative), one dose per vial
Zomacton 5 mg vial	Bacteriostatic sodium chloride, 0.9% benzyl alcohol
Zomacton 10 mg vial	Bacteriostatic water preserved with 0.33% metacresol
Humatrope cartridges	Own diluent syringe: water + 0.3% metacresol + glycerin
Genotropin 5 / 12 mg cartridges	Two-chamber cartridge, metacresol-preserved
Genotropin MiniQuick	Two-chamber, no preservative
Skytrofa (weekly)	Dual-chamber cartridge, preservative-free water
Norditropin, Sogroya, Ngenla	Ready-made liquid pens: nothing to mix

Source: current DailyMed labels for Omnitrope (Jul 2025), Serostim (Sep 2026), Zomacton (Apr 2026), Humatrope (Aug 2026), Genotropin (Aug 2026), Skytrofa (Jul 2026), Norditropin (Jul 2025), Sogroya (Feb 2026), Ngenla (Aug 2026).

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Figure 3. Growth hormone (somatotropin) diluents by brand and presentation. Source: current DailyMed labels.

Serostim and Zomacton labels also say to switch away from the benzyl-alcohol diluent for people allergic to it and in pregnancy or breastfeeding^[7,36].

6. How often FDA labels name bacteriostatic water

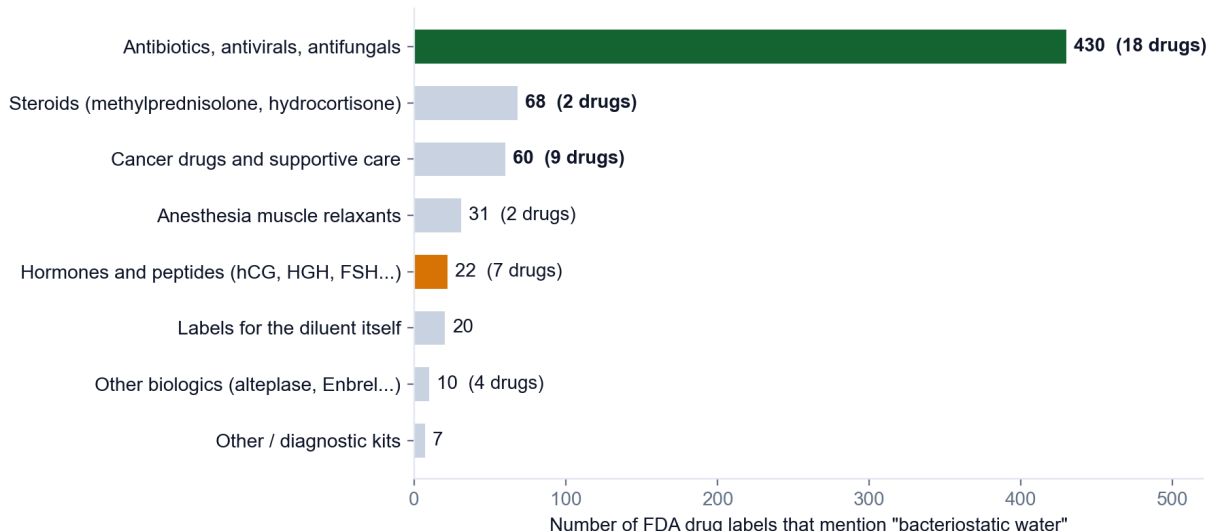
To see the bigger picture of bacteriostatic water uses, we pulled every FDA drug label in the openFDA database that contains the exact phrase "bacteriostatic water". The search returned 648 labels^[2], including repackager duplicates and some older labels. That is a count of label documents, not of medicines: the same drug often appears many times. Figure 4, below, groups them by drug class.

Antibiotics dominate because many injectable antibiotics come as powders made by several manufacturers, and their labels list bacteriostatic water among several allowed diluents. Hormones and peptides are a small slice: 22 labels across 7 active ingredients.

Limits of this count. Many products have several near-identical labels from different makers and repackagers, and some older labels are still in the database. The exact-phrase search misses labels that use other words, such as Pregnyl's "solvent" or AmBisome's "bacteriostatic agent".

Which medicines mention bacteriostatic water?

648 labels from an exact-phrase search, incl. repackager duplicates and older labels. Two in three are anti-infectives.



Source: openFDA drug label endpoint, exact-phrase search "bacteriostatic water" across all label sections, 13 Oct 2026; grouped by active ingredient by PeptideDeck. Counts include repackager copies and some older labels.

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Figure 4. FDA labels that mention bacteriostatic water, grouped by drug class. Exact-phrase search; counts include repackager duplicates and older labels. Source: openFDA, 13 October 2026; PeptideDeck grouping.

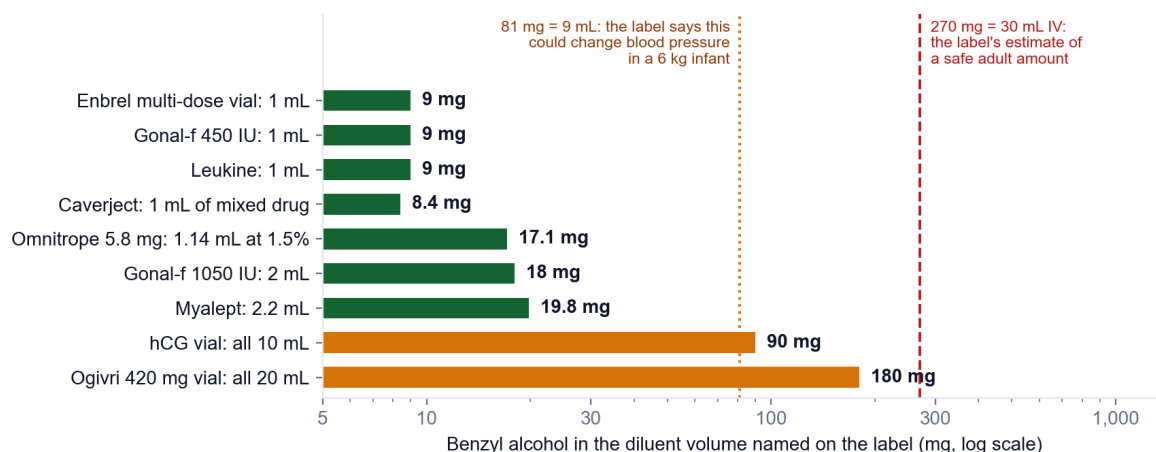
7. Benzyl alcohol injection: how much you get

The preservative is benzyl alcohol, at 9 mg in every mL of 0.9% bacteriostatic water^[1]. Figure 5, below, turns the diluent volumes in each label into milligrams.

The diluent's own label gives two reference points. It estimates that up to 30 mL (270 mg) could be given into a vein to an adult without toxic effects, based on experiments in several species, and warns that about 9 mL could change blood pressure in a 6 kg infant^[1]. Several drug labels link the "*gasping syndrome*" in newborns to benzyl alcohol doses above 99 mg/kg/day and tell prescribers to count benzyl alcohol "*from all sources*"^[6]. That is why high-dose leucovorin and drugs for newborns switch to preservative-free water^[34,18].

Benzyl alcohol injection: how much the diluent adds

Milligrams of benzyl alcohol in the diluent amount each label specifies. A whole multi-dose vial is spread over many doses.



0.9% = 9 mg/mL and 1.1% = 11 mg/mL (Hospira bacteriostatic water label); Omnitrope diluent 1.5% = 15 mg/mL; Caverject 8.4 mg/mL as stated. Volumes from each DailyMed label.

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Figure 5. Benzyl alcohol in the diluent volume each label names. Whole-vial amounts (hCG, Ogivri) are shared across several doses. Sources: Hospira bacteriostatic water label and each product's label.

8. Uses beyond mixing medicines

Benzyl alcohol is also a mild local anesthetic. That has led clinics to use **bacteriostatic saline** (0.9% salt plus 0.9% benzyl alcohol) to numb the skin. Note the difference: these studies used bacteriostatic saline, not bacteriostatic water, and none of it is a labelled use. A 2022 review counted 62 published studies of preserved saline since 1928, 31 of them on its anesthetic effect^[43].

Study	People	Compared with	Result
IV cannula, McNelis 1998 ^[44]	40	1% lidocaine (each patient had both arms)	No significant difference in cannulation pain
IV cannula, Brown 2004 ^[45]	47	Buffered 1% lidocaine	No significant difference (P = .429)
IV cannula, Ganter-Ritz 2012 ^[46]	256	1% lidocaine, buffered lidocaine	Lidocaine better at cannulation; saline the cheapest
IV cannula, Deguzman 2012 ^[47]	376	Buffered 1% lidocaine	Lidocaine gave less IV pain (P = .025)
Hip injection, Kruse 2021 ^[48]	68	Buffered 1% lidocaine	Pain 13.2 vs 14.0 out of 100 (P = .82)
Propofol sting, Minogue 2005 ^[49]	120	Lidocaine mixed in; placebo	Pain in 38% vs 52% (lidocaine) vs 84% (placebo)
Skin, benzyl alcohol + epinephrine, Wilson 1999 ^[50]	30	Lidocaine + epinephrine; plain saline	Less painful to inject, but weaker numbing than lidocaine
Lacerations, Bartfield 2001 ^[51]	52	Lidocaine + epinephrine	Less injection pain (7.5 vs 19.5 mm); 8 of 26 needed more numbing vs 2 of 26
Eyelid surgery, Yuen 1999 ^[52]	30	Plain or buffered lidocaine	Lidocaine diluted with bacteriostatic saline hurt least to inject

Botox mixed with preserved saline. Two split-face trials found less injection pain when botulinum toxin was mixed with preserved rather than preservative-free saline: 54% less in 15 patients^[53] and 60% less in 20^[54], with

no difference in effect. The Botox Cosmetic label still specifies preservative-free saline only^[35].

Limits. These are small, single-centre trials, most from 1998 to 2012, with different pain scales. The best result for bacteriostatic saline is "about as good as lidocaine for a quick needle"; for IV cannulas, the two largest trials favoured lidocaine^[47,46].

Multi-dose vials in clinics. CDC says multi-dose vials *"typically contain an antimicrobial preservative to help limit the growth of bacteria"* and should be dedicated *"to a single patient whenever possible"*^[55]. The preservative limits growth; it does not make a shared vial safe.

9. Peptides and bacteriostatic water

Outside approved medicines, the best-known use is mixing lyophilized peptide powders, the same job it does for hCG, tesamorelin and Gonal-f. How much water to add, mixing steps and how long a mixed vial lasts are covered in our [bacteriostatic water guide](#), and the [peptide calculator](#) converts a dose into syringe units. The label rules in sections 1 and 3 still apply: no use in newborns, no spinal use, and no IV use unless made isotonic^[1].

10. Questions to ask your pharmacist

- Does my medicine's label allow bacteriostatic water, or does it need sterile water or saline?
- Did my kit come with its own diluent, and must I use only that one?
- Is the "bacteriostatic" diluent in my box preserved with benzyl alcohol, metacresol or parabens?
- Is anyone receiving this medicine a newborn, pregnant or breastfeeding, or allergic to benzyl alcohol?
- How much benzyl alcohol will I get each day from all my injections?
- Is this medicine going into a vein, a muscle or under the skin, and does that change the diluent?

Mixing peptides? Read the [Bacteriostatic Water Guide: amounts, mixing steps and storage](#) on [peptidedeck.com](#).

Related: [Bacteriostatic vs sterile water vs saline](#) · [Peptide calculator](#)

Sources

Every label line in this guide was copied from the current DailyMed version of that label (SPL XML) on 13 October 2026. Trial results come from the PubMed abstracts. Brand names are used only to identify products; PeptideDeck is not affiliated with any company named.

1. Bacteriostatic Water for Injection, USP (benzyl alcohol 0.9% or 1.1%), prescribing information, Hospira, label version 20, effective May 2026. DailyMed set ID 87d6e9dc.
2. US Food and Drug Administration. openFDA drug label endpoint, exact-phrase search "bacteriostatic water" across all label sections (648 labels), queried 13 October 2026; grouping by active ingredient by PeptideDeck.
3. Novarel (chorionic gonadotropin) for injection, prescribing information, Ferring, effective August 2025. DailyMed set ID ac6918ff.
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5. Pregnyl (chorionic gonadotropin) for injection, prescribing information, Organon, effective December 2025. DailyMed set ID 1e94155f.
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7. Serostim (somatropin) prescribing information, EMD Serono, effective September 2026. DailyMed set ID 62b01d29.
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27. Invanz (ertapenem) prescribing information, Merck, effective February 2026. DailyMed set ID 33f3b99b.
28. Cancidas (caspofungin) prescribing information, Merck, effective October 2024. DailyMed set ID 3bad23a6.
29. Vecuronium Bromide for Injection, prescribing information, Meitheal, effective June 2025. DailyMed set ID 53653418.
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31. Cathflo Activase (alteplase) prescribing information, Genentech, effective January 2026. DailyMed set ID 91ecdef2.
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Medical disclaimer. This guide is for information only and is not medical advice. Bacteriostatic water is a prescription product in the US. Always follow the label of the medicine you are mixing and the advice of your pharmacist or prescriber. Benzyl alcohol must not be used in newborns. In an emergency, call your local emergency number.

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