

BENZATHINE BENZYL PENICILLIN

SYNONYMS	Benzathine benzylpenicillin G, BPG
BRAND NAME	BICILLIN L-A
DRUG CLASS	Penicillin antibiotic
AVAILABILITY	<p>Bicillin L-A disposable syringe contains 517 mg (600 000 units)/1.17 mL or 1016.6 mg (1.2 million units)/2.3 mL of benzathine benzylpenicillin tetrahydrate.¹ Also contains lecithin (soy), carmellose sodium, povidone, methyl hydroxybenzoate, propyl hydroxybenzoate and sodium citrate buffer.^{1,2} The suspension is thick and white.¹</p> <p>Extencilline 1.2 MIU contains 1.2 million units of benzathine benzylpenicillin.³ Available during shortage of Bicillin L-A. Also contains soya lecithin, polysorbate-80, carmellose sodium, sodium citrate and povidone. Diluent vial contains 5 mL of water for injections.³</p> <p>Brancaster Pharma powder for suspension contains 1.2 million units of benzathine benzylpenicillin equivalent to approximately 918 mg of benzathine benzylpenicillin.⁴ Available during shortage of Bicillin L-A. Also contains soya lecithin, polysorbate-80, carmellose sodium, sodium citrate and povidone. Diluent vial contains 5 mL of water for injections.⁴</p>

WARNING

This is a penicillin. If the patient has a history of hypersensitivity to penicillins, confirm antibiotic choice with the treating team.
All brands contain lecithin derived from soybean.

pH

No information

PREPARATION

Bicillin L-A only: ready to use.

For **part-doses** transfer the volume of the dose required into a new syringe:

Dose as benzathine benzylpenicillin	Dose as benzathine benzylpenicillin tetrahydrate	Dose in units	Volume of the dose
900 mg	1016.6 mg	1 200 000	2.3 mL
675 mg	762 mg	900 000	1.7 mL
450 mg	508 mg	600 000	1.2 mL
337.5 mg	381 mg	450 000	0.9 mL
225 mg	254 mg	300 000	0.6 mL

May be given with lidocaine 1% or 2% to reduce the pain of the injection. Check your local policies and confirm with the treating team before proceeding.⁵

Transfer the dose to a 3 mL syringe then draw up 0.5 mL of lidocaine 1%, or 0.25 mL of lidocaine 2%. Do not mix, to allow the lidocaine to be injected first.⁵

Extencilline 1.2 MIU:

Reconstitute the vial with 4 mL of water for injections or lidocaine 1%. Shake gently for at least 20 seconds, until an even suspension forms.³

For **part-doses**, first check the *TGA Information about major medicines shortages* website for current advice. If it is necessary to give a part-dose and Bicillin L-A is not available, reconstitute the vial with **4 mL of water for injections or lidocaine 1%** and see the table below.

Dose in units	Volume of the dose
1 200 000	entire contents of the vial
600 000	2.4 mL
450 000	1.8 mL

The powder volume is approximately 1 mL.^{6,7} These volumes were determined by bench testing with both water for injections and lidocaine 1%. They are rounded up to the nearest 0.2 mL for ease of measurement and to reduce the risk of under-dosing on the assumption of a low risk of toxicity.

Brancaster Pharma powder for suspension:

Reconstitute the vial with at least 3.5 mL of water for injections or lidocaine 1%. Shake gently for at least 20 seconds, until an even suspension forms.⁴

For **part-doses**, first check the *TGA Information about major medicines shortages* website for current advice. If it is necessary to give a part-dose and Bicillin L-A is not available, reconstitute the vial with **3.5 mL of water for injections or lidocaine 1%** and see the table below.

Dose in units	Volume of the dose
1 200 000	entire contents of the vial
600 000	2.4 mL
450 000	1.8 mL

The powder volume is approximately 1 mL (range 0.5 mL–1.5 mL).^{8,9} These volumes were determined by bench testing with both water for injections and lidocaine 1%. They are rounded up to the nearest 0.2 mL for ease of measurement and to reduce the risk of under-dosing on the assumption of a low risk of toxicity.

STABILITY

Bicillin L-A: store at 2 to 8 °C. Do not freeze. Stable for a single period of up to 2 months below 30 °C. Discard if not used, do not return to the fridge.¹

Extencilline 1.2 MIU, Brancaster Pharma powder for suspension: store below 25 °C. Use immediately after reconstitution.^{3,4}

ADMINISTRATION

IM injection

Suitable for adults and children.¹

Apply firm pressure to the injection site with a thumb for at least 10 seconds before inserting the needle.⁵

Use a 21 gauge needle.^{1,5}

Inject slowly, at a steady rate, preferably over at least 2 to 3 minutes for adults, into the gluteal muscle. The ventrogluteal site is preferred. In infants and small children, the vastus lateralis may be preferable.^{1,5}

For repeated doses, rotate the site of injection. Give doses greater than 1.2 million units as two injections at separate sites.¹

Injection into or near major peripheral nerves or blood vessels may cause neurovascular damage.¹ After inserting the needle, aspirate and observe the barrel for any blood or discolouration. Withdraw the needle and discard the syringe if any blood or discolouration appears in the barrel. Stop the injection immediately if it causes severe pain.

SUBCUT injection

Not recommended

IV injection

Contraindicated¹

IV infusion

Contraindicated¹

REFERENCES

1. Product information. Available from www.tga.gov.au. Accessed 08/11/2023.
2. Medical information. Source of lecithin in Bicillin L-A #01078571 [letter]. Sydney: Pfizer Australia; 06/11/2023.
3. Extencilline 1.2MIU powder and solvent for IM injectable suspension. Summary of product characteristics. Paris: Laboratoires Delbert. Approved 08/01/1974. Provided by ORSPEC Pharma 30/04/2024.
4. Benzylpenicillin benzathine 1.2 million IU powder and solvent for suspension for injection. Summary of product characteristics. Reigate, UK: Brancaster Pharma. Approved 24/07/2019. Updated 10/08/2021. Provided by ORSPEC Pharma 26/10/2023.
5. RHD Australia (ARF/RHD writing group), National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand. The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease. 3.2 ed. March 2022.
6. Medical Affairs. Extencilline 1.2 MIU powder volume & final volume of suspension after reconstitution [email]. Collegeville, PA: Provepharm; 03/05/2024.
7. Bench testing conducted by NT Health; April 2024.
8. Operations. Benzylpenicillin benzathine [email], Reigate, UK: Brancaster Pharma; 05/12/2023.
9. Bench testing conducted by NT Health; December 2023.

VERSION

9.3