Drug Monograph

A - Drug Name

blinatumomab

COMMON TRADE NAME(S): Blincyto®

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B - Mechanism of Action and Pharmacokinetics

Blinatumomab binds the CD3/T-cell receptor complex with CD19 on malignant B-cells, including precursor ALL cells. Activation of the T-cell receptor signaling cascade results in lysis of CD19-expressing cells.

Absorption	With continuous intravenous infusion (CIV), mean steady state serum concentrations were achieved within a day. Pharmacokinetics appeared linear over a dose range of 5 to 90 mcg/m^2/day.	
Distribution	Mainly distributed in the vascular space	
Metabolism	Catabolized to small peptides and amino acids	
Elimination	Half-life	(terminal): 2.2 hours
	Urine	0.2% (60 mcg/m^2/day CIV)

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C - Indications and Status

Health Canada Approvals:

- Acute lymphoblastic leukemia (ALL)

Refer to the product monograph for a full list of approved indications.

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D - Adverse Effects

Emetogenic Potential: Low

Extravasation Potential: None

The following adverse effects were reported in the Phase III study in adults with relapsed or refractory B-cell precursor ALL. Severe and life-threatening adverse effects from other clinical trials or post-marketing may also be included.

ORGAN SITE	SIDE EFFECT* (%)	ONSET**
Cardiovascular	Hypertension (7%)	E
	Hypotension (12%)	E
	Tachycardia (13%) (1% severe)	E
Dermatological	Rash (14%)	E
General	Edema (17%)	E
	Fever (60%) (7% severe)	E
Hematological	Disseminated intravascular coagulation (commonly associated with CRS)	I E
	Myelosuppression (27%) (21% severe)	E
	Other - hemophagocytic histiocytosis (1%, with CRS)	E
Hepatobiliary	↑ LFTs (17%) (10% severe)	E
	Pancreatitis (rare; may be severe)	E D
Hypersensitivity	Hypersensitivity (2%)	I
	Infusion related reaction (34%) (3% severe)	I E
Immune	Antibody response (2%)	E

	Cytokine release syndrome (14%) (3% severe)	I E
	↓ Immunoglobulins (10%)	E
Infection	Infection (43%) (24% severe, including opportunistic infections)	E
Metabolic / Endocrine	Tumour lysis syndrome (4%) (3% severe)	E
Musculoskeletal	Musculoskeletal pain (13%)	E
Nervous System	Cranial neuropathy (rare; may be severe)	E
	Dizziness (7%)	E
	Encephalopathy (1%)	E D
	Headache (29%)	E
	Immune effector cell-associated neurotoxicity syndrome (8%) (may be severe)	E
	Insomnia (10%)	E
	Peripheral neuropathy (5%)	E
	Seizure (2%)	E
	Somnolence (5%)	E
	Tremor (10%)	E
Ophthalmic	Visual disorders (6%) (blurred vision)	E
Respiratory	Cough, dyspnea (15%)	E
Vascular	Capillary leak syndrome (<1%) (commonly associated with CRS; may be severe)	I E

* "*Incidence*" may refer to an absolute value or the higher value from a reported range.
"*Rare*" may refer to events with < 1% incidence, reported in post-marketing, phase 1 studies, isolated data or anecdotal reports.

** I = *immediate* (onset in hours to days) E = *early* (days to weeks)
D = *delayed* (weeks to months) L = *late* (months to years)

Refer to the T-Cell Engaging Antibodies guideline for a detailed description of CRS and its management.

The most common side effects for blinatumomab include fever, infusion related reaction, headache, myelosuppression ± infection, bleeding, ↑ LFTs, edema, cough, dyspnea, rash, CRS, musculoskeletal pain and tachycardia.

Infusion reactions are common and may not be distinguishable from **cytokine release syndrome (CRS)**. Patients should be closely monitored for these, especially during the first infusion of the first 2 cycles. To mitigate the risk of CRS, it is important to start at the recommended doses (for Cycle 1, days 1 to 7).

CRS may be severe and sometimes fatal with a median time to onset of 2 days. It may be accompanied by disseminated intravascular coagulation (DIC) and/or capillary leak syndrome (CLS). Premedication with dexamethasone is recommended. **Hemophagocytic histiocytosis/macrophage activation syndrome** (MAS) is uncommonly reported.

Patients at risk of **tumour lysis syndrome** should have appropriate prophylaxis and be monitored closely. Patients with high leukocyte counts and/or high tumour burden as well as those with renal impairment (CrCl ≤ 30 mL/min) are at higher risk of TLS.

Severe infections, including atypical or fatal ones, have been reported. Patients with an ECOG performance status of 2 or higher are at increased risk. Grade 3 or 4 febrile neutropenia was reported in 21% of patients.

Neurologic events (of any grade) were reported in approximately 50% of adult and 25% of pediatric patients. **Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS)** has been reported and can be severe or life-threatening. Onset of ICANS may be concurrent with CRS, after CRS resolves, or in the absence of CRS. The median time to onset was within the first 2 weeks of starting blinatumomab and was generally reversible. Severe events, which may be fatal, for adult patients included encephalopathy, seizures, speech disorders, cognitive disturbances, co-ordination and balance disorders. Consider seizure prophylaxis before starting blinatumomab in patients with Down syndrome, due to a higher risk of seizures in these patients during blinatumomab treatment.

Leukoencephalopathy has been reported rarely, especially in patients who received prior cranial irradiation and chemotherapy (i.e. high dose methotrexate or intrathecal cytarabine).

Life-threatening, sometimes fatal **pancreatitis** has been reported in the clinical trial and post-market setting; in some cases high dose steroids may have been a contributing factor. The diagnosis of pancreatitis should be considered in patients who have severe upper abdominal pain accompanied with nausea, vomiting or abdominal tenderness. If pancreatitis is suspected, blinatumomab should be held or discontinued.

Less than 2% of blinatumomab treated adult patients tested positive for **anti-blinatumomab antibodies**; in the majority of these patients, the antibodies had in-vitro neutralizing activity. Contact the manufacturer to discuss antibody testing if anti-blinatumomab antibodies with a clinically significant effect is suspected.

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E - Dosing

Refer to protocol by which patient is being treated.

Neurological examination should be performed before starting blinatumomab.

Screen for hepatitis B virus in all cancer patients starting systemic treatment. Refer to the hepatitis B virus screening and management guideline.

Pre-Treatment Recommendations for Adults:

	Consolidation Phase of Multiphase Chemotherapy	**MRD-positive**	**Relapsed or Refractory**
Hospitalization (to monitor for infusion reactions that are clinically indistinguishable from CRS)	At minimum for the first 3 days of Cycle 1 and the first 2 days of Cycle 2	At minimum for the first 3 days of Cycle 1 and the first 2 days of Cycle 2	At minimum for the first 9 days of Cycle 1 and the first 2 days of Cycle 2
Premedication **(prophylaxis for infusion reactions)**	• Dexamethasone 20 mg IV 1 hr prior to first dose of each cycle • Antipyretic during the first 48 hr of each cycle	• Dexamethasone 16 mg IV or equivalent (e.g. prednisone 100 mg IV) 1 hr prior to first dose of each cycle • Antipyretic during the first 48 hr of each cycle	• Dexamethasone 20 mg IV 1 hr prior to first dose of each cycle • Antipyretic during the first 48 hr of each cycle
CNS prophylaxis	Intrathecal chemotherapy before and during treatment	Intrathecal chemotherapy before and during treatment	Intrathecal chemotherapy before and during treatment
Pre-phase Treatment For patients with high tumour burden	N/A	N/A	Dexamethasone up to 24 mg/day for up to 4 days prior to first dose for patients with ≥ 50% leukemic blasts in the bone marrow or > 15 x 10^9/L peripheral blood leukemic blast count.

Other Supportive Care:

- Patients at risk of tumour lysis syndrome should have appropriate prophylaxis.
- Consider prophylaxis against Pneumocystis jirovecii pneumonia (PJP) and herpes virus infections.
- Consider other antimicrobial prophylaxis as per local guidelines.

Adults:

Blinatumomab is given as an IV continuous infusion for 28 days, repeated every 6 weeks.

B-cell Precursor ALL in the Consolidation Phase of Multiphase Chemotherapy:

Patient Weight	**Consolidation Cycles 1 to 4**	
	Days 1 to 28 (as IV continuous infusion)	**Days 29 to 42**
≥ 45 kg (fixed-dose)	28 mcg/day	14-day treatment-free interval
< 45 kg (BSA-based dose)	15 mcg/m^2/day (maximum 28 mcg/day)	

MRD-positive B-cell Precursor ALL:

- Given as **1 induction** cycle followed by 3 consolidation cycles

Patient Weight	**Induction Cycle 1**		**Consolidation Cycles 2 - 4**	
	Days 1 to 28 (as IV continuous infusion)	**Days 29 to 42**	**Days 1 to 28** (as IV continuous infusion)	**Days 29 to 42**
≥ 45 kg (fixed-dose)	28 mcg/day	14-day treatment-free interval	28 mcg/day	14-day treatment-free interval

< 45 kg (BSA-based dose)	15 mcg/m^2/day (maximum 28 mcg/day)		15 mcg/m^2/day (maximum 28 mcg/day)	

Relapsed or Refractory B-cell Precursor ALL:

- Given as **2 induction** cycles followed by 3 consolidation cycles

Patient Weight	**Induction Cycle 1**			**Subsequent Cycles***	
	Days 1 to 7 (as IV continuous infusion)	**Days 8 to 28** (as IV continuous infusion)	**Days 29 to 42**	**Days 1 to 28** (as IV continuous infusion)	**Days 29 to 42**
≥ 45 kg (fixed-dose)	9 mcg/day	28 mcg/day	14-day treatment-free interval	28 mcg/day	14-day treatment-free interval
< 45 kg (BSA-based dose)	5 mcg/m^2/day (maximum 9 mcg/day)	15 mcg/m^2/day (maximum 28 mcg/day)		15 mcg/m^2/day (maximum 28 mcg/day)	

*Induction Cycle 2 and Consolidation Cycles 3 - 5

Refer to the product monograph for information on maintenance treatment (Not funded by NDFP).

Dosage with Toxicity:

Dose should be withheld or discontinued for toxicity as recommended.

Refer to the T-Cell Engaging Antibodies guideline for a detailed description of CRS, ICANS and their management.

Toxicity	Grade[a]	Action[b]	
		Patients ≥ 45kg	**Patients < 45kg**
Neurotoxicity (including ICANS)	Grade 1 or 2 ICANS	Manage and treat symptoms as appropriate.[c] Refer to the T-Cell Engaging Antibody Guideline for details.	
	Grade 3	Hold until recovery to ≤ Grade 1 for at least 3 days. Manage and treat symptoms as appropriate.[c] Refer to the T-Cell Engaging Antibody Guideline for details. Restart at 9 mcg/day. Increase to 28 mcg/day after 7 days if toxicity does not recur.[d] Discontinue if toxicity occurred at 9 mcg/day, or if toxicity takes more than 7 days to resolve.	Hold until recovery to ≤ Grade 1 for at least 3 days. Manage and treat symptoms as appropriate.[c] Refer to the T-Cell Engaging Antibody Guideline for details. Restart at 5 mcg/m^2/day. Increase to 15 mcg/m^2/day after 7 days if toxicity does not recur.[d] Discontinue if toxicity occurred at 5 mcg/m^2/day, or if toxicity takes more than 7 days to resolve.
	Grade 4	Discontinue. Manage and treat symptoms as appropriate.[c] Refer to the T-Cell Engaging Antibody Guideline for details.	
	Seizure	If > 1 seizure occurs, discontinue.	
Cytokine Release Syndrome	Grade 1 or 2	Manage and treat symptoms as appropriate. Refer to the T-Cell Engaging Antibody Guideline for details.	
	Grade 3	Hold until recovery to ≤ Grade 1. Manage and treat symptoms as appropriate. Refer to the T-Cell Engaging Antibody Guideline for	Hold until recovery to ≤ Grade 1. Manage and treat symptoms as appropriate. Refer to the T-Cell Engaging Antibody Guideline for details.

		details. Restart at 9 mcg/day. Increase to 28 mcg/day after 7 days if toxicity does not recur.	Restart at 5 mcg/m^2/day. Increase to 15 mcg/m^2/day after 7 days if toxicity does not recur.
	Grade 4	Discontinue. Manage and treat symptoms as appropriate. Refer to the T-Cell Engaging Antibody Guideline for details.	
LFTs > 5 x ULN or bilirubin > 3 x ULN		Hold until recovery to ≤ Grade 1. Consider restarting at 9 mcg/day. If appropriate, increase to 28 mcg/day after 7 days if toxicity does not recur. Discontinue if toxicity does not resolve within 14 days.	Hold until recovery to ≤ Grade 1. Consider restarting at 5 mcg/m^2/day. If appropriate, increase dose to 15 mcg/m^2/day after 7 days if toxicity does not recur. Discontinue if toxicity does not resolve within 14 days.
Other clinically relevant toxicity	Grade 3	Hold until recovery to ≤ Grade 1. Restart at 9 mcg/day. Increase to 28 mcg/day after 7 days if toxicity does not recur. Discontinue if toxicity does not resolve within 14 days.	Hold until recovery to ≤ Grade 1. Restart at 5 mcg/m^2/day. Increase dose to 15 mcg/m^2/day after 7 days if toxicity does not recur. Discontinue if toxicity does not resolve within 14 days.
	Grade 4	Consider discontinuing.	
Suspected Pancreatitis		Hold and investigate. Consider discontinuing if confirmed.	
Suspected leukoencephalopathy		Hold and consider neurologist consultation, brain MRI and examination of CSF. Discontinue if confirmed.	
Capillary leak syndrome, Disseminated intravascular coagulation		Hold until recovery. Weight benefit vs. risk to discontinue or restart.	

[a] ICANS and CRS Grade based on American Society for Transplantation and Cellular Therapy (ASTCT) consensus grading (Lee et.al 2019).

[b] If dose held for less than 7 days, resume same cycle. If dose held for more than 7 days, start a new cycle.

[c] Tocilizumab is not recommended for ICANS in the absence of concurrent CRS. For concurrent CRS, there is a low threshold to switch to anakinra. Refer to the T-Cell Engaging Antibody Guideline for more information.

[d] For patients ≥ 45 kg: Pre-medicate with up to 24 mg dexamethasone with a 4-day taper. For patients < 45 kg: Pre-medicate with dexamethasone (e.g. up to 20 mg) and taper the dose.

Management of Infusion-related reactions (including Cytokine Release Syndrome (CRS)):

Also refer to the CCO guideline for detailed description of Management of Cancer Medication-Related Infusion Reactions.

Grade	Management	Re-challenge
1 or 2	• Stop or slow the infusion rate. • Manage the symptoms. **Restart:** • After resolution of all symptoms, treatment can be resumed. • Consider administering dexamethasone when restarting an infusion after an interruption of ≥ 4 hours.	See restart.
3	• Stop treatment. • Aggressively manage symptoms. **Restart:** • After resolution of all symptoms, treatment can be resumed. • Consider administering dexamethasone when restarting an infusion after an interruption of ≥ 4 hours. If patient is ≥ 45 kg: • Resume at 9 mcg/day, with an escalation to 28 mcg/day after 7 days if the infusion reaction does not recur If patient is < 45 kg: • Resume at 5 mcg/ m^2/ day, with an escalation to 15 mcg/ m^2 /day after 7 days if the infusion reaction does not recur	See restart.
4	• Stop treatment. • Aggressively manage symptoms	Permanently discontinue (do not re-challenge).

Dosage with Hepatic Impairment:

Mild to moderate hepatic impairment does not have a clinically meaningful effect on blinatumomab clearance, based on population PK analysis. The effect of severe hepatic impairment on blinatumomab pharmacokinetics has not been studied.

Dosage with Renal Impairment:

No formal pharmacokinetic studies have been conducted in patients with renal impairment. No information is available in severe renal impairment (CrCl < 30 ml/min) or in patients on hemodialysis.

Dosage in the elderly:

Age does not appear to change the pharmacokinetics of blinatumomab. Patients over age 65 experienced a higher rate of serious neurological events compared to younger patients, including encephalopathy, confusion and cognitive disorders. Serious infections were also more common in older patients.

Dosage based on gender:

Gender does not appear to influence the pharmacokinetics of blinatumomab.

Dosage based on body weight

BSA in the studied range of 0.4 – 2.9 m^2 affects the pharmacokinetics of blinatumomab; however in patients ≥ 45 kg, the effect of BSA on the pharmacokinetics of blinatumomab were not clinically significant. The concentration at steady state in this group were similar between BSA-based dosing and fixed dosing. Patients < 45kg should be dosed based on BSA.

Children:

Safety and efficacy have been established in pediatric patients one month or older with Philadelphia chromosome-negative relapsed or refractory B-cell precursor ALL.

Refer to the product monograph for comprehensive pre-medication and dosing information in this population. Blinatumomab has not been administered to patients with a BSA < 0.4 m^2.

In general, adverse reactions in pediatric patients treated with blinatumomab were similar in type to those seen in adult patients. The preservative benzyl alcohol has been associated with potentially fatal toxicity ("gasping syndrome") in neonates. Avoid dosage forms or diluents containing benzyl alcohol in neonates and infants, and patients weighing < 22 kg.

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F - Administration Guidelines

Refer to the Product Monograph for detailed preparation and administration information.

- Medication errors have been reported with blinatumomab. Instructions for preparation and administration should be strictly followed.
- In patients < 45 kg, blinatumomab must be dosed based on body surface area calculations (mcg/m^2/day) and not at the fixed mcg/day dosing regimen.
- 7-day bags of blinatumomab solution for infusion, which contain benzyl alcohol as a preservative, are not recommended for use in neonates, infants, or patients weighing < 22 kg, due to potential serious and fatal adverse reactions (e.g. gasping syndrome).
- Blinatumomab is compatible with polyolefin, PVC (non-DEHP), or EVA infusion bags/pump cassettes and tubing sets. It is incompatible with DEHP equipment due to possible particle formation.
- The IV tubing should contain an in-line, sterile, non-pyrogenic, low protein-binding 0.2 or 0.22 micron filter (for 24h, 48h, 72h, or 96h infusions).
- An in-line filter is **NOT** required for a 7-day bag (based on preparation procedure in product monograph).
- Prime the IV tubing **only** with the solution in the bag containing the final prepared blinatumomab solution for infusion.

- Blinatumomab is administered by continuous IV infusion using an infusion pump. The pump should be programmable, lockable, non-elastomeric and have an alarm.
- Infuse through a dedicated lumen; **DO NOT** flush infusion lines into the patient. Inadvertent excess dosage may be given as the infusion bag contains overfill to account for tubing priming volume.
- Monitor closely for infusion reactions, CRS and ICANS, especially during the first infusion of the first and second cycles. Refer to the T-Cell Engaging Antibodies guideline for more information.

Infusion rates for fixed dose:

Infusion rate (mL/h)	Duration of infusion (hour)	Total dose volume (mL)	Overfill in bag (mL)*
10	24	240	~35-45 mL, depending on the dose and the infusion duration
5	48	240	
3.3	72	237.6	
2.5	96	240	
0.6	168 (7 days)	100.8	~10 mL

*based on preparation instructions in product monograph

Storage / Stability:

- Refrigerate unopened vials (including IV solution stabilizer) in original package between 2-8^{o}C.
- Protect from light. Do not freeze.
- Refer to the product monograph for storage requirements of reconstituted or diluted solutions. Storage times include infusion time. If IV bag of solution for infusion is not administered within the time frames and temperatures indicated, discard; do not refrigerate again.

Also refer to the CCO guideline for detailed description of Management of Cancer Medication-Related Infusion Reactions.

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G - Special Precautions

Contraindications:

- Patients who are hypersensitive to this drug or any of its components.

Other Warnings/Precautions:

- Patients with high leukocyte counts and/or high tumour burden as well as those with moderate renal impairment are at risk of tumour lysis syndrome. Prophylaxis and close monitoring should be considered.
- Vaccination with live viral vaccines is not recommended for at least 2 weeks prior to the start of treatment, during treatment, and until recovery of the B lymphocytes to normal range following the last cycle. If blinatumomab exposure occurred during pregnancy, the infant's B lymphocytes should be monitored and deemed within the normal range prior to administration of live vaccines.
- There is limited experience with blinatumomab in patients with a history of neurological events or with active ALL in the CNS.
- There is limited experience with blinatumomab in patients with active uncontrolled infections.
- Patients who have received prior cranial irradiation and chemotherapy (i.e. high dose methotrexate or intrathecal cytarabine) are at increased risk of encephalopathy and should be monitored closely.
- Blinatumomab is not recommended for patients with CD-19 negative disease.
- Lineage switch from ALL to AML has been reported in patients receiving blinatumomab. Close monitoring is recommended in patients with documented immunophenotypic and/or cytogenetic abnormalities at initial diagnosis of B-precursor ALL.
- Due to the potential for neurological events, including seizures, patients should refrain from driving and engaging in hazardous tasks or activities while receiving blinatumomab.

Other Drug Properties:

- Carcinogenicity: Unknown

Pregnancy and Lactation:

- Mutagenicity: Unknown
- Embryotoxicity: Not observed in animal studies
- Teratogenicity: Not observed in animal studies
  It is not known if blinatumomab can cause fetal harm, but animal studies have demonstrated that the drug crosses the placental barrier. The risk associated with the fetal exposure to the preservative benzyl alcohol through maternal drug administration is unknown.
- Pregnancy:
  Blinatumomab is not recommended for use in pregnancy. Adequate contraception should be used by patients and their partners during treatment, and for at least **48 hours** after the last dose.
- Breastfeeding:
  Breastfeeding is not recommended during treatment and for at least **48 hours** after the last dose.
- Excretion into breast milk: Unknown
- Fertility effects: Unknown

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H - Interactions

No formal drug interaction studies have been conducted. Blinatumomab causes a transient release of cytokines that may suppress CYP450 enzymes, especially during the first 9 days of the first cycle and the first 2 days of the second cycle. Patients receiving concomitant substrates of CYP450, especially those with a narrow therapeutic index, may be at risk of substrate toxicity.

AGENT	EFFECT	MECHANISM	MANAGEMENT
CYP 2C9 substrates (e.g. warfarin, meloxicam, fluvastatin)	increased risk of substrate toxicity	blinatumomab treatment may suppress CYP450	monitor and adjust dose of narrow therapeutic range substrates (e.g. warfarin)
CYP3A4 substrates (e.g. cyclosporine, pimozide, tacrolimus, triazolo-benzodiazepines, dihydropyridine calcium-channel blockers, certain HMG-CoA reductase inhibitors)	increased risk of substrate toxicity	blinatumomab treatment may suppress CYP450	monitor and adjust dose of narrow therapeutic range substrates (e.g. cyclosporine)

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I - Recommended Clinical Monitoring

Treating physicians may decide to monitor more or less frequently for individual patients but should always consider recommendations from the product monograph.

Refer to the hepatitis B virus screening and management guideline for monitoring during and after treatment.

Refer to the T-Cell Engaging Antibodies guideline for monitoring of CRS and ICANS during and after treatment.

Recommended Clinical Monitoring

Monitor Type	Monitor Frequency
CBC	Baseline, before each cycle and as clinically indicated
Liver function tests	Baseline and before each cycle
Clinical toxicity assessment for infusion reactions, CRS and ICANS	Monitor frequently during and after the first few infusions (cycles 1 & 2). At each visit and as clinically indicated after subsequent doses.
CRP, ferritin, coagulation tests (e.g. aPTT, INR, PT, fibrinogen)	Baseline and as clinically indicated
Signs and symptoms of TLS (renal function, electrolytes, fluid balance, etc.)	In the first 48 h of the first infusion; thereafter as clinically indicated
Clinical toxicity assessment for infections, bleeding, GI effects, pancreatitis, edema, neurological events	At each visit

Grade toxicity using the current NCI-CTCAE (Common Terminology Criteria for Adverse Events) version

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J - Supplementary Public Funding

New Drug Funding Program (NDFP Website)

- Blinatumomab - Relapsed or Refractory Acute Lymphoblastic Leukemia (Ph+ BCP-ALL)
- Blinatumomab - Relapsed or Refractory Acute Lymphoblastic Leukemia (Ph- BCP-ALL)

- Blinatumomab - Minimal Residual Disease (MRD)-Positive B-cell Precursor Acute Lymphoblastic Leukemia
- Blinatumomab - Relapsed or Refractory Pediatric Acute Lymphoblastic Leukemia
- Blinatumomab - Front-line Consolidation for B-cell Precursor Acute Lymphoblastic Leukemia

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K - References

Blinatumomab (Blincyto) product monograph. Amgen Canada Inc. August 1, 2025.

Blinatumomab (Blincyto) prescribing information. Amgen Inc. (USA). March 2021 and June 2024.

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Gökbuget N, Dombret H, Bonifacio M, et al. Blinatumomab for minimal residual disease in adults with B-cell precursor acute lymphoblastic leukemia. Blood. 2018;131(14):1522-31.

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Von Stackelberg A, Locatelli F, Zugmaier G, et al. Phase I/Phase II Study of Blinatumomab in Pediatric Patients With Relapsed/Refractory Acute Lymphoblastic Leukemia. Journal of Clinical Oncology. 2016 Dec 20; 34(36):4381-4389.

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L - Disclaimer

Refer to the New Drug Funding Program or Ontario Public Drug Programs websites for the most up-to-date public funding information.

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