Apheresis Platelet Products Offered by Versiti: A Side by Side Comparison

	Pathogen Reduced (PR) Platelet	Large Volume, Delayed Sampling (LVDS) Platelet – 7D	Cold Stored Platelet (CSP)
Description of Product	Apheresis platelet that undergoes pathogen inactivation process (INTERCEPT™ Blood System, Cerus Inc)**, within 24 hours of collection**.	Apheresis platelet from which aerobic and anaerobic cultures (bioMerieux BACT/ALERT®) are obtained at a **minimum of 48 hours after collection.**	Apheresis platelet collected in plasma that has been stored at 1-6°C **within 4 hours from end of collection.**
Proportion of Versiti Inventory (Actual inventory levels will fluctuate)	On average 40-50%	On average 50-60%	Limited Quantity; Special Order
Bacterial Mitigation Process	Psoralen plus UVA light treatment inactivates DNA in cells preventing replication of bacteria, viruses and protozoa, and donor lymphocytes.	Each apheresis platelet unit has 16 mL removed ≥48 hours after collection for aerobic and anaerobic cultures. Cultures are incubated for 12 hours prior to distribution of the product.	No bacterial culture performed. Continuous storage at 1-6°C within 4 hours of collection limits the growth of bacteria.
Volume*	200 - 350 mL	180 – 350 mL	200-360 mL
Platelet Yield*‡	3.0 – 4.1 x 10^{11} Low Yield: 2.6-2.9 x 10^{11}	3.0 – 4.6 x 10^{11} Low Yield: 2.6-2.9 x 10^{11}	3.0 – 4.6 x 10^{11} Low Yield: 2.6-2.9 x 10^{11}
Expiration (day of collection = Day 0)	5 days	7 days	14 days (see *Additional Information/Cautions*)
Earliest Product is Available for Release	Day 2	Day 3	Day 2
Storage Conditions	20-24°C with agitation	20-24°C with agitation	1-6°C (1-10°C during transport) **without** agitation

* Stated ranges represent a majority of products.
‡ Actual platelet yield is documented on unit label.

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Special Attributes/Modifications			
CMV Seronegative	Equivalent (Leukocyte-reduced & CMV inactivated by processing) Not Orderable	Leukocyte-reduced (considered acceptable for CMV negative recipients) Orderable	Leukocyte-reduced (considered acceptable for CMV negative recipients) Not Orderable
Irradiation	Equivalent (donor lymphocytes inactivated by processing) Not Orderable	Orderable	Orderable
Volume Reduction	Orderable	Orderable	Not applicable/not orderable based on indications for this product
Washing	Orderable	Orderable	Not applicable/not orderable based on indications for this product
Aliquot bags (on request)	Yes	Yes	Check with Hospital Relations
	Pathogen Reduced (PR) Platelet	**Large Volume, Delayed Sampling (LVDS) Platelet – 7D**	**Cold Stored Platelet (CSP)**
Advantages / Disadvantages			
Advantages	• Sooner availability post collection. • No need to irradiate. • No need to request CMV negative for at-risk patients. • Proactive approach to prevent potential infection from novel and/or unknown viruses, prions, and other infectious agents.	• 7-day shelf life without need for additional bacterial testing. • Similar properties and efficacy as conventional platelets.	• Longer shelf-life; 14-day shelf life at 1-6°C without agitation (see *Additional Information/Cautions*). • Potentially better hemostatic advantage over room temperature platelets in actively bleeding patients. [1,2]
Disadvantages	• Studies have shown lower 1-hour and 24-hour post-transfusion corrected count increments (CCI) compared to conventional apheresis platelets; but no increase in bleeding events.[3,4] • Mean time to next transfusion may be shorter, resulting in greater number of platelet transfusions.[3,4] • PR platelets may be implicated in an increase in platelet refractoriness and alloimmunization.[3,4] • Potential supply constraints based on requirements for manufacture.	• May not reduce risk of bacterial contamination as much as PR platelets. • Detection of bacteria, although increased with large volume sampling, is not guaranteed. • Other infectious agents (such as viruses, prions or protozoa) are not detected.	• Increased clearance and reduced survival in vivo (1 day or less compared to 3-4 days for room temperature stored platelets).[1,2] • CSP should not be used for patients requiring prophylactic platelet transfusion (e.g. patients with hypocellular marrow due to chemotherapy).

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Additional Information/Cautions	• Avoid in patients with history of hypersensitivity reaction to amotosalen or other psoralens. • Potential rare risk of erythema in neonates treated with phototherapy devices that emit a peak energy wavelength.		• FDA approved for 3-day storage; several blood suppliers have received variances from FDA for 14-day storage. • Indicated for actively bleeding patients when conventional platelet products are not available, or their use is not practical. • CSP cannot be converted to room temperature stored platelet. • Store CSP with label down, on a flat surface and not directly on a wire grate (sagging of the unit between the grates can lead to microaggregate formation).
Product Administration	No change from current practice. Follow institutional policy.	No change from current practice. Follow institutional policy.	• Follow institutional policy. • Minimize time CSP is out of refrigerated temperature prior to start of transfusion. (Maximum allowable time that CSP can be outside of 1-6°C is unknown.)

References:

1. Reddoch-Cardenas KM, Bynum JA, Meledeo MA, et al. Cold-stored platelets: A product with function optimized for hemorrhage control. *Transfus Apher Sci.* 2019 Feb;58(1):16-22. doi: 10.1016/j.transci.2018.12.012. Epub 2018 Dec 30.
2. Zhao H, Devine DV. The missing pieces to the cold-stored platelet puzzle. *Int. J. Mol. Sci.* 2022, 23, 1100. https://doi.org/10.3390/ ijms23031100
3. Pati I, Masiello F, Pupella S, et al. Efficacy and safety of pathogen reduced platelets compared with standard apheresis platelets: A systematic review of RCTs. *Pathogens* 2022, 11, 639. https://doi.org/10.3390/pathogens11060639
4. Estcourt LJ, Malouf R, Hopewell S, et al. Pathogen-reduced platelets for the prevention of bleeding. *Cochrane Database of Systematic Reviews* 2017, Issue 7. Art. No.: CD009072. DOI: 10.1002/14651858.CD009072.pub3.

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