



## Humavant® CR

### Human Milk Caloric Fortifier (Human, Pasteurized)

### Preparation Guidelines†

Humavant CR is a human milk caloric fortifier that is intended for use with mother's own milk (MOM) or donor milk (DM) to increase calories and achieve adequate growth. Humavant CR caloric fortifier delivers at least 2.5 kcal/mL. It does not take the place of Humavant® human milk fortifier (human, pasteurized) and does not increase the protein or mineral content of milk.

Consider using Humavant CR caloric fortifier for premature infants in these clinical situations:

- Poor growth<sup>1</sup>
- Continuous feeds<sup>2,3</sup>
- Feeds pumped longer than 30 minutes<sup>2,3</sup>
- High-energy expenditure<sup>4,5</sup>
- High volume producing mother or low-calorie MOM<sup>6,7</sup>
- When part of a standard feeding protocol or guideline

#### How to Add Humavant CR Caloric Fortifier to Infant Feeds

It is important to optimize the concentration of Humavant fortifier to ensure that protein goals are met when using Humavant CR caloric fortifier. When no creatinocrit or commercial human milk analyzer is being used to determine the caloric content of human milk in the neonatal intensive care unit (NICU), the following four methods can be used to calculate the amount of Humavant CR caloric fortifier needed to achieve nutritional goals.

### 1 Increase Caloric Content of Human Milk Fortified With Humavant Fortifier\*†

	Human Milk	Humavant® Fortifier	Humavant® CR Caloric Fortifier	kcal/100 mL Increase	Total Grams of Protein /100 mL
<b>Human Milk + Humavant®+4</b>	80 mL	20 mL	0 mL		<b>1.9</b>
<b>+ Humavant CR</b>	80 mL	20 mL	4 mL	<b>7</b>	<b>1.9</b>
<b>+ Humavant CR</b>	80 mL	20 mL	8 mL	<b>13</b>	<b>1.9</b>
<b>Human Milk + Humavant®+6</b>	70 mL	30 mL	0 mL		<b>2.4</b>
<b>+ Humavant CR</b>	70 mL	30 mL	4 mL	<b>7</b>	<b>2.4</b>
<b>+ Humavant CR</b>	70 mL	30 mL	8 mL	<b>13</b>	<b>2.3</b>
<b>Human Milk + Humavant®+8</b>	60 mL	40 mL	0 mL		<b>2.9</b>
<b>+ Humavant CR</b>	60 mL	40 mL	4 mL	<b>6</b>	<b>2.9</b>
<b>+ Humavant CR</b>	60 mL	40 mL	10 mL	<b>15</b>	<b>2.8</b>
<b>Human Milk + Humavant®+10</b>	50 mL	50 mL	0 mL		<b>3.5</b>
<b>+ Humavant CR</b>	50 mL	50 mL	4 mL	<b>6</b>	<b>3.4</b>
<b>+ Humavant CR</b>	50 mL	50 mL	10 mL	<b>14</b>	<b>3.2</b>

\*Ensure that protein goals are met before adding Humavant CR caloric fortifier.

†The values for calories and protein in the table are based on the published reference that the human milk being fortified contains 20 kcal/fl oz and 0.9 g protein/100 mL<sup>8</sup> and Humavant CR caloric fortifier provides a median of 2.6 kcal/mL.

## How to Add Humavant CR Caloric Fortifier to Infant Feeds (continued)

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### Increase Caloric Content of 100 mL Unfortified Human Milk\*

Human Milk	Humavant® CR Caloric Fortifier	Total Yield	kcal/100 mL Increase
100 mL	<b>4 mL</b>	<b>104 mL</b>	<b>7</b>
100 mL	<b>8 mL</b>	<b>108 mL</b>	<b>14</b>
100 mL	<b>12 mL</b>	<b>112 mL</b>	<b>21</b>
100 mL	<b>16 mL†</b>	<b>116 mL</b>	<b>27</b>
100 mL	<b>22 mL†</b>	<b>122 mL</b>	<b>35</b>

\*The values for calories in the table are based on the published reference that the human milk being fortified contains 20 kcal/fl oz<sup>8</sup> and Humavant CR caloric fortifier provides a median of 2.6 kcal/mL.

†The need to increase by 27 and 35 kcal/100 mL with Humavant CR caloric fortifier without additional fortification is rare but may be needed with complex medical management.

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### Increase Caloric Content of Unfortified Human Milk by Specific Number of Calories\*

To increase calories by <b>7 kcal/100 mL</b>	MOM or DM mL x <b>0.04</b> = ____ mL Humavant CR
To increase calories by <b>14 kcal/100 mL</b>	MOM or DM mL x <b>0.08</b> = ____ mL Humavant CR
To increase calories by <b>21 kcal/100 mL</b>	MOM or DM mL x <b>0.12</b> = ____ mL Humavant CR
To increase calories by <b>27 kcal/100 mL</b>	MOM or DM mL x <b>0.16</b> = ____ mL Humavant CR
To increase calories by <b>35 kcal/100 mL</b>	MOM or DM mL x <b>0.22</b> = ____ mL Humavant CR

\*Calculation methodology adapted from the protocol for a National Clinical Trial (NCT02475434) entitled "A Randomized Trial of the Use of Human Milk Cream to Decrease Length of Stay in Extremely Premature Infants" (A.B. Hair, MD, email communication, July 2018).

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### Increase Caloric Content of Fortified or Unfortified Human Milk by Providing a Bolus of Humavant CR Caloric Fortifier Immediately Prior to Each Feed

#### Calculation Steps:

1. Current kcal/kg/d x desired % increase in calories = needed kcal/kg/d

2. Needed kcal/kg/d x weight in kg = kcal/d

3. kcal/d ÷ 2.6 kcal/mL Humavant CR = mL Humavant CR/d

4. mL Humavant CR/d ÷ number of feeds/d = mL of Humavant CR per feed

#### Example:

1. 120 kcal/kg/d x 10% = 12 kcal/kg/d

2. 12 kcal/kg/d x 0.5 kg = 6 kcal/d

3. 6 kcal/d ÷ 2.6 kcal/mL Humavant CR = 2.3 mL Humavant CR/d

4. 2.3 mL Humavant CR/d ÷ 8 feeds/d = 0.3 mL/feed

1. Hair AB, Blanco CL, Moreira AG, et al. Randomized trial of human milk cream as a supplement to standard fortification of an exclusive human milk-based diet in infants 750-1250 g birth weight. *J Pediatr*. 2014;165(5):915-920. doi:10.1016/j.jpeds.2014.07.005 2. Rogers SP, Hicks PD, Hamzo M, Veit LE, Abrams SA. Continuous feedings of fortified human milk lead to nutrient losses of fat, calcium and phosphorus. *Nutrients*. 2010;2(3):230-240. doi:10.3390/nu2030240 3. Brooks C, Vickers AM, Aryal S. Comparison of lipid and calorie loss from donor human milk among 3 methods of simulated gavage feeding: one-hour, 2-hour, and intermittent gravity feedings. *Adv Neonatal Care*. 2013;13(2):131-138. doi:10.1097/ANC.0b013e31827e225b 4. Embleton ND. Optimal protein and energy intakes in preterm infants. *Early Hum Dev*. 2007; 83(12):831-837. doi:10.1016/j.earlhumdev.2007.10.001 5. de Meer K, Westerterp KR, Houwen RH, Brouwers HA, Berger R, Okken A. Total energy expenditure in infants with bronchopulmonary dysplasia is associated with respiratory status. *Eur J Pediatr*. 1997;156(4):299-304. doi:10.1007/s004310050605 6. Lawrence RA, Lawrence RM. *Breastfeeding: A Guide for the Medical Profession*. 8th ed. Amsterdam, The Netherlands: Elsevier; 2015:104. 7. Wojcik KY, Rechman DJ, Lee ML, Montoya A, Medo ET. Macronutrient analysis of a nationwide sample of donor breast milk. *J Am Diet Assoc*. 2009;109(1):137-140. doi:10.1016/j.jada.2008.10.008 8. American Academy of Pediatrics Committee on Nutrition. Appendix A. In: Kleinman RE, Greer FR, eds. *Pediatric Nutrition*. 8th ed. Itasca, IL: American Academy of Pediatrics; 2019:1505-1508.

‡ This document is intended to provide a guideline for healthcare providers on the use of an exclusive human milk diet in infants ≤1250 g birth weight. The information within is the collective opinion of the Nutrition Advisory Committee, a committee sponsored by Prolacta Bioscience, Inc. As with all feeding guidelines, healthcare providers should exercise appropriate medical judgment in accordance with their clinical experience and outcomes related to the management of nutrition in very low birth weight infants.

**Important Notice:** Product not suitable for use as a sole source of nourishment. Infant may require additional vitamins and iron added separately from the product. Product must be used under medical supervision. Not for parenteral use.