



BOVINE ROTAVIRUS-CORONAVIRUS VACCINE, KILLED VIRUS, *CLOSTRIDIUM PERFRINGENS* C & D-*ESCHERICHIA COLI* BACTERIN-TOXOID



Comprehensive Protection in a Scours Vaccine.

GUARDIAN® is a complete neonatal diarrhea (scours) vaccine with a broad spectrum of antigens linked to four major bacterial and viral causes of scours in pre-weaned dairy calves, including:

- Rotavirus types G6 and G10
- Coronavirus types 1 and 3
- *Clostridium perfringens* types C & D
- *E. coli* type K99

Vaccinating dry cows and late-gestation heifers with GUARDIAN boosts antibody concentrations in their colostrum, and along with colostrum management can reduce or eliminate the need to vaccinate individual calves.

#1 Scours is the top cause of death of pre-weaned dairy calves.

Calf scours accounts for half of all deaths of pre-weaned dairy calves, and 74% that develop scours are treated with antibiotics.^{1,2} However, the cost of scours goes far beyond death loss and treatment cost, since scours can also negatively impact milk production in the first lactation.³

Most sophisticated sub-unit *E. coli* technology.

GUARDIAN is the only scours vaccine that offers subunit vaccine technology for the K99 *E. coli* fraction, which ensures effective and safe protection for peace of mind when vaccinating pregnant cattle. *E. coli* protection was shown when the first dose was given as early as 6 months prior to calving.

Flexible dosing schedule.

The patented water and oil adjuvant stimulates long-lasting immunity, which allows for a flexible dosing schedule to accommodate any dry period length.^{4,5,6} This means you can complete the vaccination protocol before colostrum production – which begins up to five weeks before calving – to maximize the amount of scours-fighting antibodies concentrated in the colostrum.

¹National Animal Health Monitoring System, Health and Management Practices on U.S. Dairy Operations, 2014.

²National Animal Health Monitoring System, Reference of Dairy Cattle Health and Management Practices in the U.S., 2007.

³Soberon F, et al. Preweaning milk replacer intake and effects on long-term productivity of dairy calves. *J Dairy Sci.* 2012;95:783-793.

⁴Merck Animal Health *E. coli* pilus type K99 efficacy study B06-248-01R1, 2008.

⁵Merck Animal Health group A rotavirus, *E. coli* and *Clostridium perfringens* types C and D efficacy studies 90794-15AR and 90794-15BR1, 2000 and 2001.

⁶Merck Animal Health bovine coronavirus efficacy studies 90794-15BR2 and B01-177-01R, 2000 and 2002.

⁷Johnson AP, et al. Randomized noninferiority study evaluating the efficacy of 2 commercial dry cow mastitis formulations. *J Dairy Sci.* 2016;99:593-607.

⁸Aruda AG, et al. Randomized noninferiority clinical trial evaluating 3 commercial dry cow mastitis preparations, Part 1. *J Dairy Sci.* 2013;96:4419-4435.

Dry period protection now for a productive future.

The dry period is an important time to minimize mastitis risk and to vaccinate cows to protect their calves from scours. Along with GUARDIAN, help protect your herd with the use of:

- **ORBENIN-DC™** – dry cow mastitis treatment that targets Gram-positive bacteria which cause more than 94% of subclinical mastitis infections at dry-off.^{7,8}
- **SHUTOUT®** – an internal teat sealant that functions as a physical barrier to help prevent bacterial invasion of the teat canal.
- **BOVILIS J-5®** – a Gram-negative core-antigen vaccine that aids in the reduction of mastitis due to *E. coli*.

DOSAGE & ADMINISTRATION

- Initial vaccination includes 2 mL injected subcutaneously three months prior to calving followed by a second 2-mL injection three to six weeks later.
- For subsequent calvings, revaccinate with a single 2-mL dose five to seven weeks before calving.
- GUARDIAN is the only scours vaccine labeled for subcutaneous administration to meet Dairy Beef Quality Assurance guidelines.
- For complete directions and dosing regimen, refer to the product label.

PRESENTATIONS

- Available in 20-mL and 100-mL bottles.

For more information, talk to your veterinarian or visit GuardianForCattle.com.



MADE IN THE USA

ORBENIN-DC: For use in dry cows only. Do not use within four weeks (28 days) of calving. Treated animals must not be slaughtered for food purposes within 4 weeks (28 days) of treatment. For additional information, see the product label.

BOVILIS J-5: This product contains oil adjuvant. In the event of accidental self-injection, seek medical attention immediately. For additional information, see the product label.

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