

Duralactin® Equine



Active ingredients per day

MicroLactin® ..... 14,000 mg

- Palatable vanilla flavored granules
- Give with feed
- One bucket treats one horse for a month



Dose

1 scoop twice a day or 2 scoops once a day (scoop enclosed)

# 3003828, 850 grams, 6 buckets per case

Duralactin® Equine  
JOINT PLUS



COMBINATION JOINT SUPPLEMENT

Active ingredients per day

MicroLactin® ..... 14,000 mg

Glucosamine HCl (marine source) ..... 1,800 mg

Chondroitin sulfate (marine source) ..... 600 mg

Vitamin C ..... 100 mg

Zinc ..... 30 mg

Manganese ..... 16 mg



- Palatable butter flavored pellets
- Give with feed
- One bucket treats one horse for a month

Glucosamine and Chondroitin

- Helps support structural integrity of joints and connective tissues
- Helps maintain healthy joint structure and mobility

Dose

1 ounce scoop twice a day or 2 scoops once a day (scoop enclosed)

# 3005575, 3.75 lbs, 6 buckets per case



VETERINARY PRODUCTS LABORATORIES  
Innovative Products in Veterinary Medicine™

PO Box 34820, Phoenix, AZ 85067-4820

888.241.9545 Fax 800.215.5875

www.vpl.com

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MicroLactin is a registered trademark of Stolle Milk Biologies, Inc. (SMBI)

(U.S. Patent Numbers 5,242,691; 5,352,462; 5,650,175; 5,980,953)

PUBLISHED LITERATURE REGARDING DURALACTIN®

Beck, L.R., et al. Milk Lymphocyte Anti-Adhesion Factor, and Its Role as an Antimicrobial. Published in Indigenous Antimicrobial Agents of Milk in Recent Developments. Uppsala: International Dairy Federation; pp. 62-72; 1994.

Ishida, A., et al. Consumption of Milk from Cows Immunized with Intestinal Bacteria Influences Age-Related Changes in Immune Competence in Mice. *J. Nutr.* 122; 1875-1883; 1992.

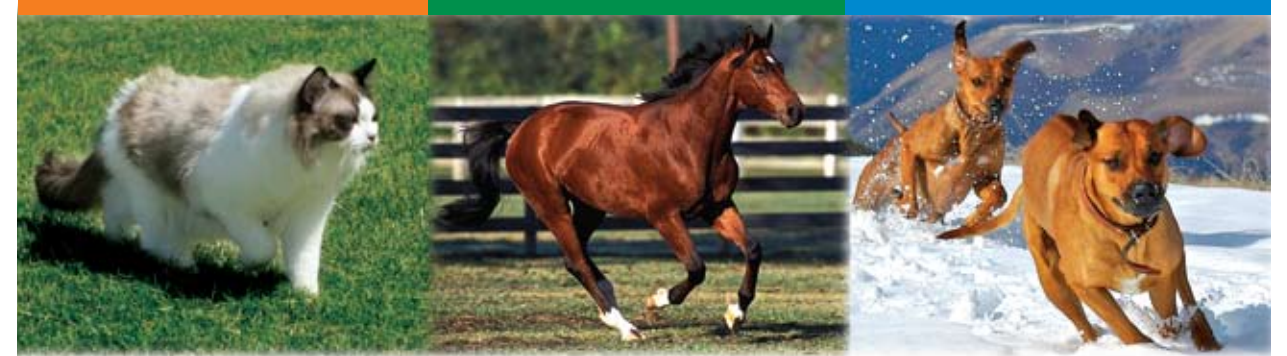
Ormrod, D.J., et al. The Anti-Inflammatory Activity of a Low Molecular Weight Component Derived from the Milk of Hyperimmunized Cows. *Agents Actions* 32: 160-166; 1991.

Owens, W.E., et al. Evaluation of an Anti-Inflammatory Factor Derived from Hyperimmunized Cows (42832). P.S.E.B.M. 190: 79-86; 1989.

Owens, W.E., et al. Effect of a Milk-Derived Factor on the Inflammatory Response to Staphylococcus aureus Intramammary Infection. *Vet. Immunol. Immunopathol.* 30: 233-246; 1992.

Sharpe, S.J., et al. Cholesterol-Lowering and Blood Pressure Effects of Immune Milk. *Am. J. Clin. Nutr.* 59: 929-934; 1994.

Woodman, R., et al. The Effects of Hyperimmunized Milk Factor (HIMF) on Neutrophil Adhesion in Vivo. Abstract, Soc. Leukocyte Biol.; 29th National Meeting, Charleston, S.C.; 1992.



# DURALACTIN®

FOR THE LONG TERM MANAGEMENT OF CHRONIC INFLAMMATION

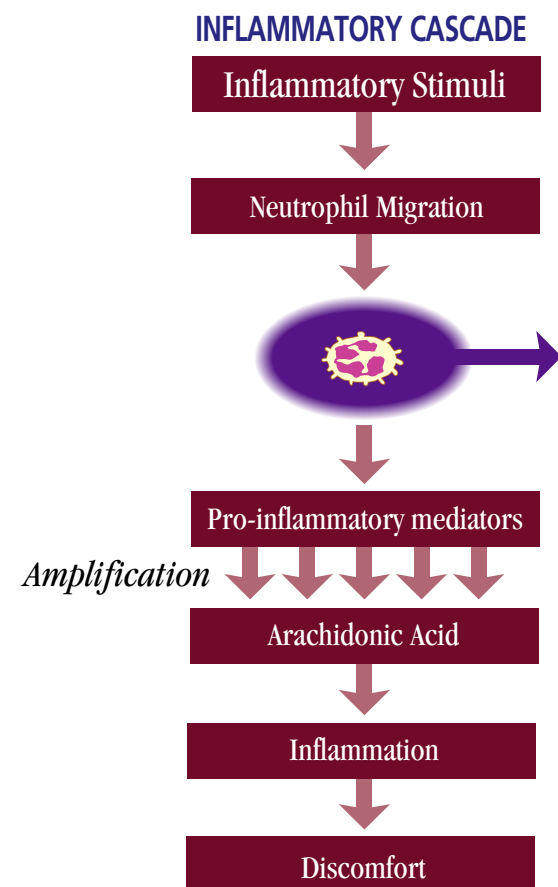
To help support normal activity and wellness



**What is INFLAMMATION?**

Inflammation is a multi-faceted primarily cellular response to injury. After an inflammatory stimulus, neutrophils are activated and migrate to the source of the insult. Neutrophils release a number of substances, including digestive enzymes and inflammatory mediators.

Some of these mediators result in arachidonic acid metabolism, which is further converted by cyclooxygenase (COX) and lipoxygenase (LOX) into inflammatory prostaglandins and other components. This results in inflammation and ultimately discomfort.

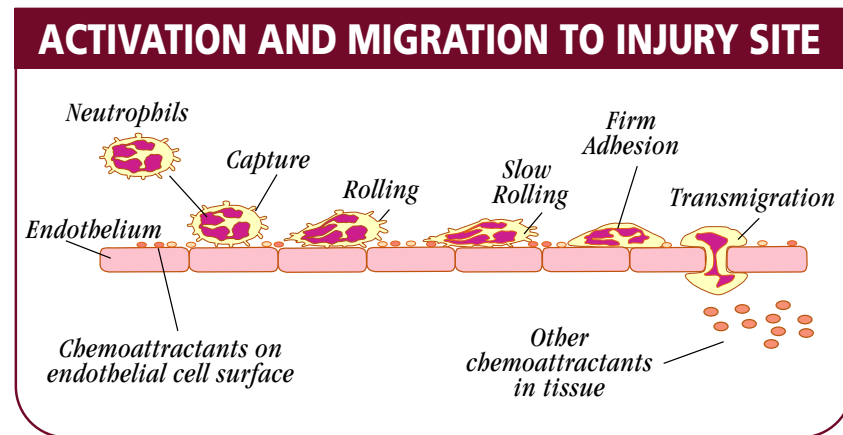


**What Role do Cytokines and Neutrophils play in INFLAMMATION?**

Inflammation is triggered by chemical mediators (histamine, serotonin, etc.) and mediators from white blood cells, especially neutrophils (prostaglandins, leukotrienes, lysosomal enzymes, etc.).

Injured cells produce cytokines such as IL-1 $\beta$  and TNF $\alpha$  that stimulate the emigration of neutrophils from the capillaries so they release their destructive enzymes at the site of inflammation. The initiating cause of inflammation does not determine the results at the cellular and tissue level.

In all cases of inflammation, neutrophils are attracted to the site of injury and invade the tissue, and amplify the inflammatory cascade.



Ormod, D. J., et al. A Low Molecular Weight Component Derived from the Milk of Hyperimmunized Cows Suppresses Inflammation by Inhibiting Neutrophil Emigration. Agents Actions 37: 70-79; 1992.  
Ormod, D. J., et al. Milk from Hyperimmunized Cows as a Source of a Novel Biological Response Modifier. Agents Actions 38: C146-C149; 1993.

**What is Duralactin® and how does it WORK?**

Duralactin® contains MicroLactin®, a patented dried milk protein from the milk of hyperimmunized cows. MicroLactin® contains factors that appear to block cytokines to inhibit neutrophil participation in the inflammatory response. This reduces inflammation and helps prevent subsequent tissue damage caused by excess neutrophil infiltration. At this level, Duralactin® helps stop chronic inflammation at the cellular level and so avoids inhibiting protective prostaglandin activity.

Partially purified preparations inhibit inflammation in many laboratory animal models. The anti-inflammatory activity is bioavailable both orally and systemically, is effective regardless of the etiology of the inflammation and appears to function with no evidence of gastro-intestinal irritation. Duralactin® is an ideal therapeutic option for the management of chronic inflammation where neutrophils are known to participate. Duralactin® supports normal activity and wellness.



*Histological evidence clearly demonstrates a reduction in neutrophil migration to the site of inflammation. Note the reduction of neutrophils in rat's ear tissue after application of TPA.\**  
\*12-O - tetradecanoylphorbol - 13 - acetate



*Air tube of rat receiving conventional milk and exposed to smoke. Wall and lumen are infiltrated with inflammatory cells.*

*Air tube of rat receiving SMBI Milk and exposed to smoke. Wall contains normal bronchial associated lymphoid tissue.*

## How to use DURALACTIN®

### Recommended Regimen

DURALACTIN® may be used as a primary supplement to help manage inflammation, or as an adjunctive therapy. DURALACTIN® is available for cats, dogs and horses.

Week 1-3:

Duralactin® with other therapies

Week 3 and beyond:

Duralactin®

Consult package directions for specific dosage regimens.

Duralactin® may be used as a primary supplement to manage chronic inflammation and to support normal activity and wellness. Response is expected in 4-7 days with peak response in 10-14 days.

### Use Duralactin® for these patients

- Patients with chronic inflammation
- Patients that need long-term therapy
- Older patients (dogs and cats >7 years)
- High risk patients (hepatitis, renal, GI)
- Patients that do not respond to other therapies
- Patients that experience adverse effects to other therapies

Management Options	
Option	Potential Side-Effects
COX-1 and/or COX-2, LOX Inhibitors	Gastrointestinal ulcerations, hepatopathy, renal toxicity, and bleeding disorders
Phospholipase-A Inhibitors	Suppression of the immune system, increased risk of infection, excessive weight gain, impaired tissue healing, and adrenal dysfunction
Other Nutraceuticals	None known
DURALACTIN®	None known



### Canine Efficacy STUDY

### Technical Brief: Canine Study Abstract

**Use of Client-specific Outcome Measures to Assess Treatment Effects in Geriatric Dogs with Orthopedic Disabilities: Controlled Clinical Evaluation of a Supplement**

*D. Gingerich DVM, MS; J Strobel, PhD  
Veterinary Therapeutics, Vol 4, No 1, Spring 2003*

A questionnaire method was designed for dog owners to monitor the orthopedic disabilities of their pets for evaluation of a nutraceutical with joint health claims. Fifty large-breed dogs, 7 to 12 years of age, presenting with signs of orthopedic disabilities, were randomly allocated to placebo and active treatment groups. Degree of disability was assessed by physical examination, a standard questionnaire on daily activities, and a case-specific questionnaire that monitored specific impairments of each dog.

The test product was a special milk protein concentrate (SMPC) from

hyperimmunized cows, previously shown to express anti-inflammatory activity in humans. After a one week run-in period of dosing with placebo, each dog was randomly assigned to a treatment and given gelatin capsules containing either SMPC or a placebo twice daily for 8 weeks.

Overall improvement was noted in 68% and 35% of the SMPC and placebo groups, respectively. Significant ( $p < 0.05$ ) improvement in mean standardized and patient-specific questionnaire scores and in owner global assessments was detected in the dogs in the SMPC group but not in the placebo group. Compared with the placebo group, the treatment response was significantly better in the SMPC group with regard to case-specific scores ( $p < 0.001$ ) and owner global assessments ( $p = 0.004$ ). The product was well tolerated and serum chemistry findings remained within normal limits.

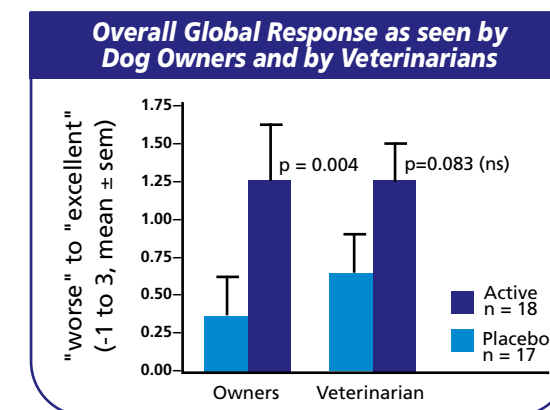
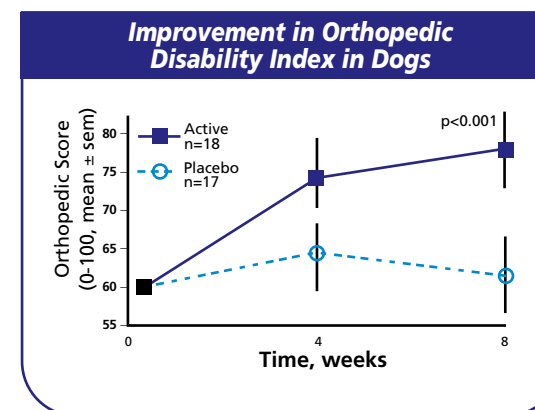
## Duralactin® FEATURES & BENEFITS

### Features

- Unique approach to inflammation
- Non-toxic
- Convenient dosing schedule
- Tablets, capsules, granules, liquid & paste
- 100% product guarantee

### Benefits

- Can be used alone or with other therapies
- Ideal for long term use & high risk animals
- Easy client compliance
- Easy to dose
- Money back, no risk



*Feline Safety* **STUDY**



Duralactin® Feline, non-flavored granules in capsules, is highly accepted by cats. To determine if Duralactin® Feline was well tolerated, ten cats were administered 5X the recommended daily dosage (approximately 200 mg/kg/day) for 14 days. CBC and chemistry results indicated no abnormal changes and stayed within normal

limits. The most frequent observation was vomiting in several cats. However, no indication of hematemesis was observed, suggesting that vomiting was likely due to a change in the diet associated with milk protein or carbohydrates in the test substance.\*

*\*Data on file*

*Duralactin®*  
**FELINE CAPSULES**



**Active ingredient per capsule**..... *MicroLactin®* 200 mg

- Non-flavored granules
- Open capsules and mix with food

Dose	
Under 12 lbs.....	1 capsule twice a day
Over 12 lbs.....	2 capsules in the morning & 1 capsule in the evening

# 3003829, 60 Count, 12 bottles per case

*Equine Evidence Based*  
**STUDY**



**The Use of MicroLactin® for Inflammatory Conditions in Equine Veterinary Practice**

Thomas R. Bello, DVM, PhD and Tammy Allen, RVT

Journal of Equine Veterinary Science, Vol 25, No 9, Sept 2005

**Summary**

Fifty-eight horses with inflammation from lameness/foot trauma, muscle and skin trauma, and respiratory, gastrointestinal, and soft tissue toxins were fed MicroLactin®

(Duralactin® Equine, Veterinary Products Laboratories, Phoenix AZ) as an aid to therapy to inhibit neutrophil participation in the inflammatory response. Based on clinical signs of observed improvement and owner's observations, there was 86% positive effect, 14% no effect. Owner's satisfaction of results was seen by continued use of MicroLactin® in respiratory inflammation, chronic lameness, myositis, and skin inflammation.

*Duralactin®*  
**FELINE LIQUID**



**Active ingredients per teaspoon (5 ml)**

*MicroLactin®* .....200 mg  
*Omega 6 Fatty Acids* ..... 198 mg  
*Omega 3 Fatty Acids* ..... 90 mg  
Ratio 2.2 : 1

- Highly palatable liquid formulation to make dosing easy for cats
- Give orally or mix with food
- Each bottle will treat one average weight cat twice a day for 24 days

**Fatty acids are important for:**

- Proper joint function • Immune system support
- Gastrointestinal health • Healthy skin and coat maintenance

Dose	
12 lbs and under.....	1 teaspoon twice a day
Over 12 lbs.....	2 teaspoons in morning & 1 teaspoon in evening or 1.5 teaspoons twice a day.

# 3005218, 8 oz bottle, 12 bottles per case

*Duralactin®*  
**FELINE L-LYSINE**



Helps maintain respiratory and ocular health especially in cats that are physically stressed

**Active ingredients per 2.5 ml**

*L-lysine*.....250 mg      *Omega 6 fatty acids*..... 162 mg  
*MicroLactin®* .....200 mg      *Omega 3 fatty acids*..... 72.5 mg  
Ratio 2.2 : 1

- Highly palatable paste preferred by both healthy cats & cats in isolation for respiratory signs\*
- Give orally or mix with food
- Each syringe is notched and marked for individual dose
- One syringe will treat one cat twice a day for a week
- Usually need 2 to 3 syringes per cat for treatment

Dose	
2.5 ml (one notch or line on syringe) twice a day Kittens may be dosed at 1.25 ml (1/2 notch) as needed	

# 3005932, 12 syringes per box, 6 boxes per case

*Duralactin®*  
**CANINE**



**Active ingredient per tablet**..... *MicroLactin®* 1,000 mg

- Chewable vanilla flavored tablets dogs love
- Can be given as a treat or mixed with food

Dose	
Under 40 lbs.....	1/2 tablet twice a day
40 to 80 lbs.....	1 tablet twice a day
81 to 120 lbs.....	1 1/2 tablets twice a day
Over 120 lbs.....	2 tablets twice a day

# 3002932, 60 Count, 12 bottles per case

# 3004948 180 Count, 12 bottles per case