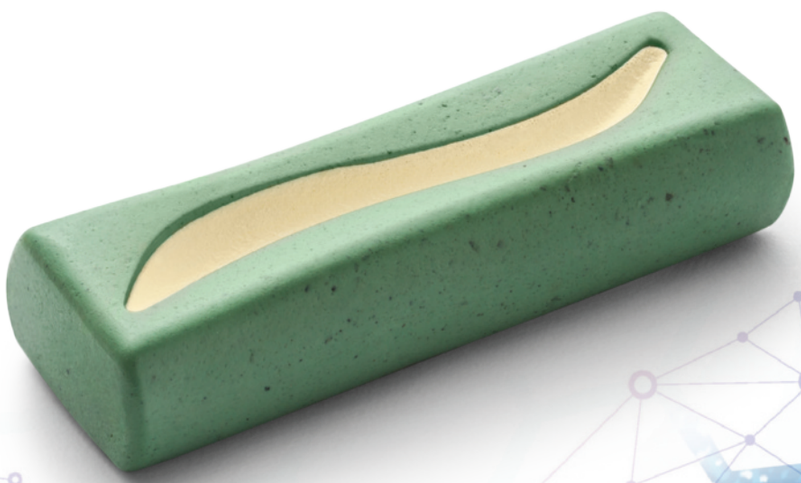
NEW

ORAVET®

DENTAL HYGIENE CHEWS

Serious Oral Care Made Simple®

Block plaque, calculus, and halitosis with the science of prevention



OraVet® Dental Hygiene Chews—Backed by Science You Can Believe In

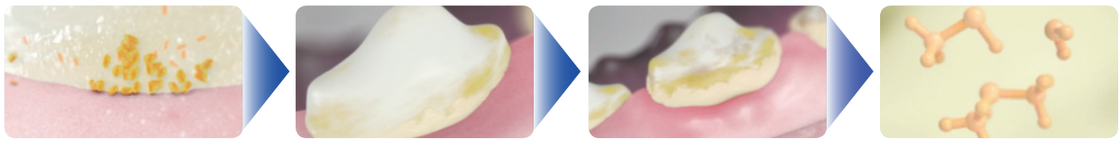
A New Way to Combat Plaque, Calculus, and Halitosis Where They Start—Bacterial Biofilms

Delmopinol hydrochloride forms a barrier against oral bacteria

- **Extensively tested in human use:** Each daily chew releases delmopinol, which has been used for years in a human oral rinse
    - Delmopinol is licensed exclusively to Merial for veterinary use
- **Prevents bacterial attachment:** Demonstrated in in vitro laboratory studies[1,2]
    - Delmopinol creates a barrier that inhibits bacterial attachment, the development of plaque biofilms, and the production of the volatile sulfur compounds of halitosis

DELMOPINOL INHIBITS ORAL BACTERIA AT EVERY STEP

How Plaque and Halitosis Develop



Salivary pellicle forms and bacteria attach to the pellicle

Bacteria colonize and plaque biofilms form

Plaque hardens into calculus, halitosis develops

Plaque accumulation continues, halitosis intensifies

Delmopinol Interrupts Plaque and Halitosis Development[1-4]

- Inhibits bacterial attachment to the pellicle
- Creates a protective barrier on teeth to prevent plaque buildup
- Disrupts plaque matrix, prevents new bacteria from adhering to teeth

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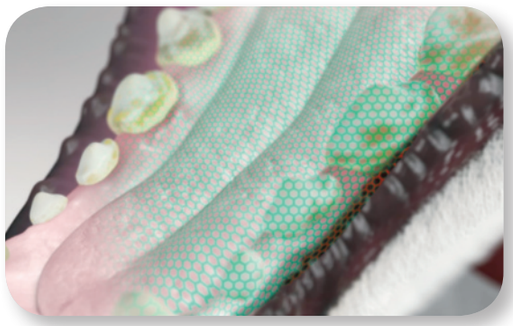
Reduces Existing Plaque Through Effective Mechanical Action

The Unique Dual-Action Mechanism Is Simple but Remarkably Effective

- **Disrupts the plaque matrix:** The quick-melt formulation of OraVet Dental Hygiene Chews releases delmopinol throughout the mouth, reducing the viscosity of bacterial proteins[3] and the surface tension between the plaque and tooth enamel
- **Removes plaque and calculus:** The scrubbing action of the chew works in parallel with delmopinol to effectively remove plaque and calculus



Delmopinol coats the inside of the dog's mouth

Delmopinol:

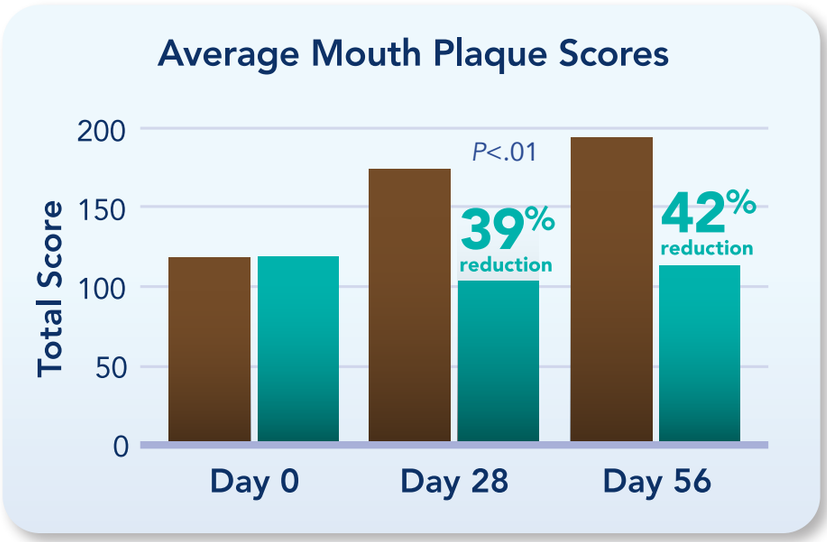
>3 DOZEN

Rigorous human and animal clinical trials

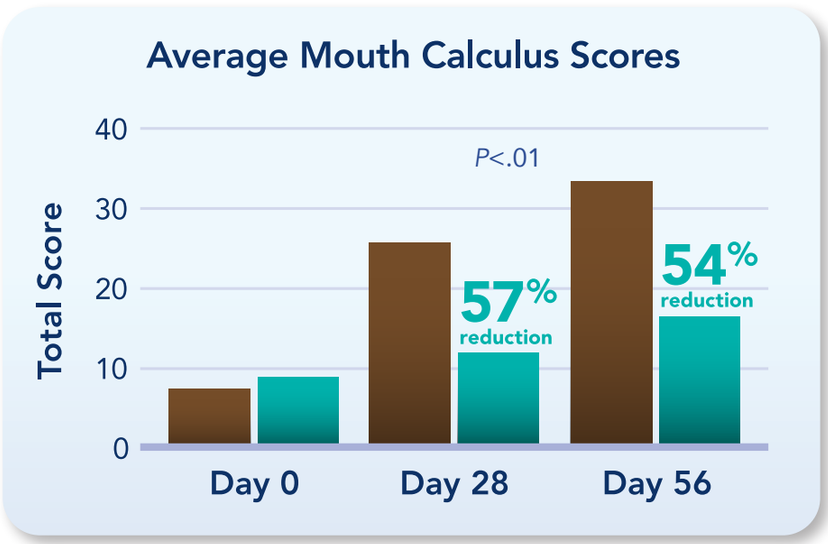
☑ **Demonstrating its proven technology**

Proven Reduction in Key Oral Health Indicators

OraVet® Dental Hygiene Chews Significantly Reduce Plaque and Calculus Buildup When Given Daily



- OraVet Dental Hygiene Chews reduced plaque scores by an average of 42% compared with dogs receiving a dry diet alone at Day 56 (*P*<.01)[4]



Dry Diet Alone
OraVet Dental Hygiene Chews

- OraVet Dental Hygiene Chews reduced calculus scores by an average of 54% compared with dogs receiving a dry diet alone at Day 56 (*P*<.01)[4]

Study Design: Study dogs underwent a dental scaling and polishing 7 days prior to the start of the study. On study Day 0, halitosis, plaque, and calculus were evaluated, and dogs were stratified by their baseline plaque scores into 3 groups to receive: 1) Dry diet alone, 2) Dry diet and an uncoated chew, and 3) Dry diet and a delmopinol-coated chew. Each dog underwent another dental cleaning and polishing to ensure a clean mouth at the start of the test phase (56-day study period). Outcome measures (eg, plaque and calculus formation and halitosis) were evaluated at Days 28 and 56.[4]

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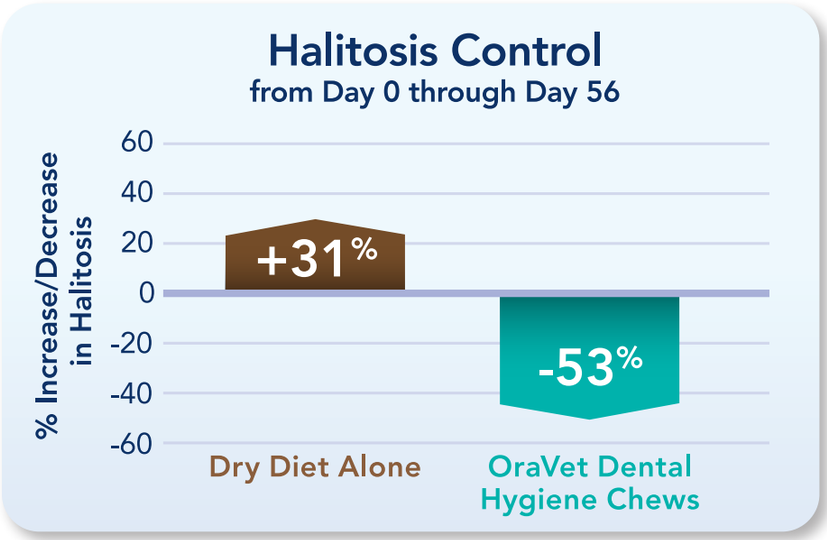
OraVet Dental Hygiene Chews Provide Exceptional Halitosis Control



- When given daily, OraVet Dental Hygiene Chews reduced average halitosis in dogs by 53% compared with dogs receiving a dry diet alone at Day 56 ($P<.01$), while dogs given a dry diet alone had a 31% increase in halitosis from baseline[4]

Halitosis is one of the few signs of poor oral hygiene owners are likely to recognize in their dogs[5]

Halitosis was evaluated using a Halimeter®, a device that quantitatively measures the presence of volatile sulfur compounds—the principal sources of halitosis. Readings were obtained on each side of the mouth, and total mouth malodor scoring was determined by the average of the bilateral mouth scores.

Extend the Benefits of a Dog's Prophy

Using OraVet® Dental Hygiene Chews Can Keep Dogs' Teeth Cleaner Between In-clinic Cleanings

- Compared to controls, dogs treated with OraVet Barrier Sealant and given OraVet Dental Hygiene Chews showed reductions in plaque, calculus, and halitosis[6]

Efficacy of OraVet Dental Hygiene Chew Following the Application of OraVet Barrier Sealant[6*]

- **11%** reduction in plaque
    - It is important to note while scoring for plaque in this study, remnants of dental sealant were discovered in the crevices of the upper 4th premolar of some of the dogs. It appears that the "plaque" being scored actually consisted of a large amount of the dental sealant
- **39%** reduction in calculus
- **40%** reduction in halitosis

Study Design: Study dogs underwent a dental scaling and polishing 7 days prior to the start of the study. On study Day 0, halitosis, plaque, and calculus were evaluated, after which each dog underwent another dental cleaning and polishing to ensure a clean mouth at the start of the test phase (42-day study period). After the mouth was cleaned and dried, the OraVet Barrier Sealant was applied along the top gingival line of all dogs.[6]

On Days 0 to 14, all dogs received control diet only. On Days 15 to 42, dogs were stratified, based on plaque scores, into 2 study groups to receive: **1)** dry diet alone or **2)** dry diet followed by OraVet Dental Hygiene Chews. Outcome measures were evaluated at Day 42 for dogs in each treatment cohort.[6]

*Compared with dry diet alone.

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OraVet Dental Hygiene Chews Are Easy to Give

- **Highly palatable:** In a laboratory study, the average palatability score of OraVet Dental Hygiene Chews indicated that in most instances dogs accepted the chews on first offer[4]
- **Highly dissolvable:** Demonstrated in in vitro canine digestion models[7]

OraVet Dental Hygiene Chews for daily use

- In a 42-day study, compared with dogs given a dry diet alone, dogs given OraVet Dental Hygiene Chews once daily following application of OraVet Barrier Sealant demonstrated:
  - No difference in weekly food consumption or changes in body weight[6]
- Contains ingredients derived from corn, wheat, and soy

Available in 3 Low-Calorie Sizes

	Size	Dog Weight	Calories per Chew
	**Small**	10 to 24 pounds	47.7
	**Medium**	25 to 50 pounds	80.5
	**Large**	Over 50 pounds	128.2

For dogs 6 months of age or older.
Do not administer OraVet Dental Hygiene Chews to cats.

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OraVet® Dental Hygiene Chews Combat Plaque, Calculus, and Halitosis at the Source

- Delmopinol, used for years in a human oral rinse, now available for the first time in a canine oral hygiene chew
  - Prevents bacterial attachment[1,2]
  - Inhibits plaque biofilm attachment and the production of the volatile sulfur compounds of halitosis[1-3]
- Significantly reduces plaque and calculus buildup when given daily[4]
- Exceptional halitosis control[4]
- Highly palatable[4]

PROVEN REDUCTION IN KEY ORAL HEALTH INDICATORS[4]*

HALITOSIS	PLAQUE	CALCULUS
53%	42%	54%

For more information, contact your Merial representative or visit **OraVet.com.**

*Compared with dry diet alone.

References: 1. Vassilakos N, Arnebrant T, Rundergren J. In vitro interactions of delmopinol hydrochloride with salivary films adsorbed at solid/liquid interfaces. *Caries Res.* 1993;27:176-182. **2.** Steinberg D, Beeman D, Bowen W. The effect of delmopinol on glucosyltransferase adsorbed on to saliva-coated hydroxyapatite. *Archs oral Biol.* 1992;37:33-38. **3.** Rundegren J and Arnebrant T. Effect of delmopinol on the viscosity of extracellular glucans produced by Streptococcus mutans. *Caries Res.* 1992;26(4):281-285. **4.** Data on file at Merial Inc. **5.** American Veterinary Dental College website. Periodontal disease. http://www.avdc.org/periodontaldisease.html. Accessed May 10, 2015. **6.** Data on file at Merial Inc. **7.** Data on file at Merial Inc.

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