

Single Dose Pinkeye Protection Alpha-7/MB™ -1 and Ocu-Guard® MB-1

Key Points

- A single dose of **Alpha-7/MB™ -1** provided protection against a virulent *Moraxella bovis* challenge.
- A single dose of **Ocu-Guard® MB-1** provided protection against a virulent *Moraxella bovis* challenge.

Introduction

A challenge trial was completed to evaluate the effectiveness of a single dose of **Alpha-7/MB-1** or **Ocu-Guard MB-1** to protect against infectious bovine keratoconjunctivitis (pinkeye) due to *Moraxella bovis*.

Study Design

Forty-three Holstein steers weighing approximately 310 lbs. were randomly assigned to one of the following treatment groups:

- Group 1: Vaccinated with **Alpha-7/MB-1** (n = 16)
- Group 2: Vaccinated with **Ocu-Guard MB-1** (n=16)
- Group 3: Un-vaccinated controls (n=11)

At the beginning of the trial (Day 0), calves in Group 1 were vaccinated with a single, 2 mL dose of **Alpha 7/MB-1** and calves in Group 2 were vaccinated with a single, 2 mL dose of **Ocu-Guard MB-1**. Both vaccines were administered via subcutaneous injection in the neck. On Day 120, calves in all three groups were challenged by applying virulent *Moraxella bovis* directly into both eyes of each calf.

On days 3 through 7 following challenge, eyes were evaluated and lesions were scored based on the following scoring protocol:

- 0 Normal
- 1 Lacrimation and photophobia with a slight clouding of the cornea
- 2 Clouding of the cornea and small lesion 1 to 2 mm
- 3 Large severe lesion greater than 3 mm
- 4 Hyperemia (reddening) of cornea or sclera, lesion greater than 4 mm, some hypopyon (pus in eye)
- 5 Greater than 5 mm ulcer, hyperemia of cornea or sclera, hypopyon covering cornea

On the final day of scoring, the scores for each animal were totaled and a cumulative eye score for all animals in each treatment group was calculated. The cumulative eye score was compared between vaccinates and controls. Scores between groups were evaluated statistically using the Wilcoxon Rank Sum test.

Results Eye Scores

Alpha-7/MB™-1							Ocu-guard® MB-1						
	Days Post-Challenge					Totals		Days Post-Challenge					Totals
ID	3	4	5	6	7	Totals	ID	3	4	5	6	7	Totals
1	0	0	0	0	0	0	3	0	0	0	0	0	0
2	0	0	0	0	0	0	6	0	0	0	0	0	0
4	0	0	0	0	0	0	7	1	0	0	0	0	1
5	1	0	1	0	0	2	11	0	0	0	0	0	0
9	0	0	0	0	0	0	14	0	0	0	0	0	0
12	0	0	0	0	0	0	17	0	0	0	0	0	0
18	1	2	1	1	1	6	20	0	0	0	0	0	0
19	0	0	0	0	0	0	21	0	0	0	0	0	0
25	0	0	0	0	0	0	23	0	0	0	0	0	0
27	0	0	0	0	0	0	24	0	0	0	0	0	0
29	0	0	0	0	0	0	26	0	0	0	0	0	0
35	0	3	3	4	3	13	28	1	3	5	5	5	19
36	0	0	0	0	0	0	30	0	0	0	0	0	0
37	0	0	0	0	0	0	34	0	0	0	0	0	0
42	0	0	2	3	3	8	39	0	2	2	0	2	6
43	0	0	0	3	3	6	41	1	2	3	3	2	11
Total	2	5	7	11	10	35	Total	3	7	10	8	9	37

Controls						
	Days Post-Challenge					Totals
ID	3	4	5	6	7	Totals
8	7*	8	9	8	8	40
10	8	8	8	6	6	36
13	3	4	4	4	4	19
15	4	3	3	3	1	14
16	4	6	6	6	4	26
22	5	6	6	6	5	28
31	1	0	0	0	0	1
32	3	2	2	3	3	13
33	6	7	10	10	10	43
38	8	10	10	10	10	48
40	5	5	5	5	5	25
Total	54	59	63	61	56	293

* Note: Each eye was scored on a scale of 0 to 5. The daily eye score for an animal may range from 0 to 10.

- The cumulative eye score for the **Alpha-7/MB™-1** group was 35 vs 293 for the controls. The cumulative eye scores differed significantly by $p = 0.0003$.
- The cumulative eye score for the **Ocu-Guard® MB-1** group was 37 vs 293 for the controls. The cumulative eye scores differed significantly by $p = 0.0003$.

The Bottom Line

- A single dose of **Alpha 7/MB-1** or **Ocu-Guard MB-1** protected the calves against pinkeye due to *Moraxella bovis*.
- Following challenge, calves vaccinated with **Alpha-7/MB-1** or **Ocu-Guard MB-1** had significantly lower ($p = 0.0003$) eye lesion scores versus controls.
- A single dose of **Alpha-7/MB-1** now provides protective levels of immunity against *Moraxella bovis* and the major clostridial diseases.