Riboflavin. He also notes that owner evaluation of visual capability suggested Crystallin lens proteins are long-lived proteins allowing them to "clump" together. This clumping of damaged proteins is what is recognized as a cataract.

The Systems Approach

Crystallin lens proteins are long-lived proteins expressed early in life with virtually no turnover or protein synthesis. The eye protects its DNA from damage with numerous antioxidant systems. The OcluVet formula was designed to target the reactions that lead to the formation of damaged proteins and provide the nutrients needed to repair the altered amino residues and oxidation to allow the proteins to return to their healthy, noncross-linked state. Unlike oral or commercially available eye drop supplements that demonstrate little or no benefit, OcluVet utilizes a systems approach targeting compromised and damaged components of the eye. This powerful antioxidant/nutrient system provides immediate neutralization of existing free radicals and is a glycation and protein cross-linking inhibitor.

Key Ingredients in OcluVet’s Patent-Pending Formula

- **L-Carnosine**: A powerful antioxidant. Immediately neutralizes free radicals and is a glycosylation and protein crosslinking inhibitor.
- **N-Acetyl L-Carnosine**: Provides the same activity as L-Carnosine but with longer residence time in the cells.
- **L-Taurine**: Antioxidant, detoxifying activity. Helps stabilize cell membrane, modulation of cellular calcium levels.
- **Glutathione**: The most important, powerful antioxidant in the lens. Critical in protecting protein, DNA repair.
- **Riboflavin**: A water soluble vitamin (B-2). Vital for the synthesis and recycling of Glutathione.
- **Cysteine Ascorbate**: A water stable source of vitamin C and L-cysteine, necessary for metabolism of Glutathione.

Glycation of lens proteins is a primary factor in cataract formation. Glycation results in the formation of a Schiff base (SB) and Amadori rearrangement via the Maillard reaction leading to early glycation products. As the process continues, dehydration and rearrangement leads to cross-links between adjacent proteins, resulting in protein aggregates, advanced glycation end products (AGE’s) and increased oxidative stress (glycoxidation).
Clinical Studies

Two clinical trials have been completed to test the OcluVet formulation in patients with lens opacities ranging from lenticular sclerosis to hypermature cataract.

One trial was conducted by a researcher at the University of Cambridge, Dr. David L. Williams, MA VetMB PhD CertVOpthalm MRCVS (results published 9/2006 Veterinary Ophthalmology). He reported that 47 of the 57 eyes (82%) showed a measurable reduction in opacity. He also notes that owner evaluation of visual capability suggested improvement in vision in 80% of cases. The second was a multi-hospital U.S. study and the supervising veterinarians reported 102 of the 123 eyes (83%) studied showed a measurable reduction in opacity.

The similar findings between both studies is remarkable. The superior results seen in the earlier stages of cataracts and lenticular sclerosis indicates a significant benefit in beginning administration of OcluVet at the first sign of any opacity. It should also be noted that in hypermature cases administration of 1 drop TID for a period longer than 8 weeks may increase the reduction seen in these latter stages.

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SUMMARY
Animals studied 30 dogs of varying breeds and ages with a spectrum of lens opacities ranging from nuclear sclerosis to total mature cataract.

Methods Dogs were treated three times daily with topical 2% N-acetyl carnosine in a buffered vehicle containing the antioxidants glutathione, cysteine ascorbate, L-taurine and riboflavin (OcluVet™, Practivet, Phoenix, AZ, USA). Dogs were examined prior to treatment and at 2, 4 and 8 weeks during treatment, by direct and indirect ophthalmoscopy and slit-lamp biomicroscopy after pharmacologic pupil dilation.

Multi-Veterinarian/Multi-Veterinary Clinic Study
Data gathered from 23 hospitals in different geographical locations across the United States.

SUMMARY
Animals studied 64 animals of varying species, breeds and ages with a spectrum of lens opacities ranging from lenticular sclerosis to hypermature cataract.

Methods Patients were treated three times daily with topical n-acetyl-carnosine, L-carnosine, glutathione, cysteine ascorbate, L-taurine and riboflavin in a buffered lubricating solution. Animals were examined prior to treatment and at 4, 6 and 8 weeks during treatment, by ophthalmoscopy and varying tests of visual responsiveness including owner observations.

These photographs are of a U. S. study participant (patient 185). The photo on the left is pretreatment and the photo on the right is at 8 weeks post-treatment. The supervising veterinarian noted that at the 6 and 8 week exams the retinal vessels were visible where previously they could not be seen. This is clearly demonstrated in the photos.