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 **iROMED Group**

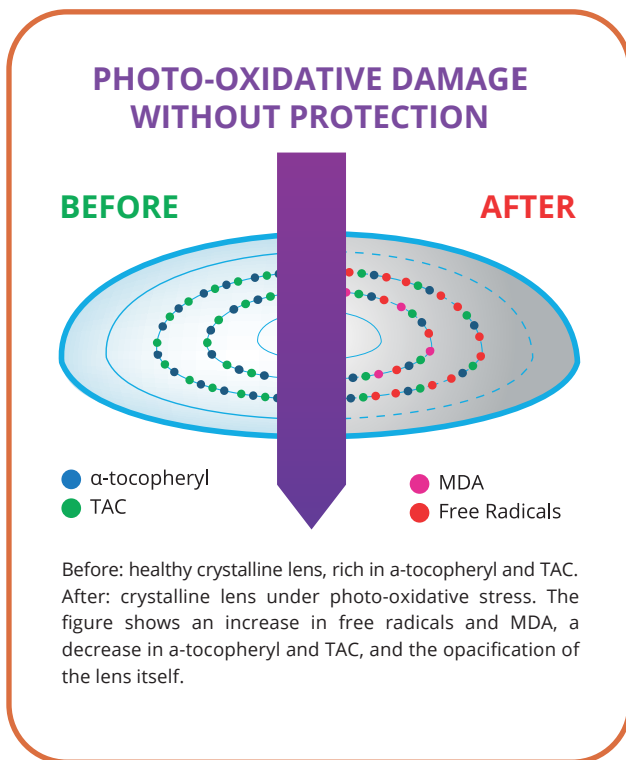
# DROP clar

ANTIOXIDANT EYE DROPS

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# ANTIOXIDANT OPHTHALMIC SOLUTION

**DROPclar®** is a patented antioxidant solution that protects the crystalline lens from photo-oxidative damage. **DROPclar®** contributes to the maintenance of the lens' Total Antioxidant Capacity and counteracts the formation of free radicals, which are responsible for the opacification of the lens. As a result, **DROPclar®** preserves the lens' transparency.



## CRYSTALLINE LENS AND PHOTO-OXIDATIVE DAMAGE

The crystalline lens is particularly susceptible to oxidative damage. It is equipped with a valuable antioxidant defense system that maintains its transparency. The lines of defense are both enzymatic (SOD, CAT and GSH-Px peroxidase) and non-enzymatic (ascorbic acid and GSH), and are responsible for maintaining the levels of alpha tocopheryl and TAC (total antioxidant capacity) sufficient to protect the crystalline lens from photo-oxidative damage. Exposure of the lens to the photo-oxidative insult causes peroxidative damage to membrane lipids, resulting in increased levels of MDA (Malondialdehyde). The further consequence of this damage is the formation of free radicals, which activate enzymatic (SOD, CAT and GSH-Px peroxidase) and non-enzymatic reactions, resulting in cross-linking and aggregation of proteins, phenomena responsible for the opacity of the lens.

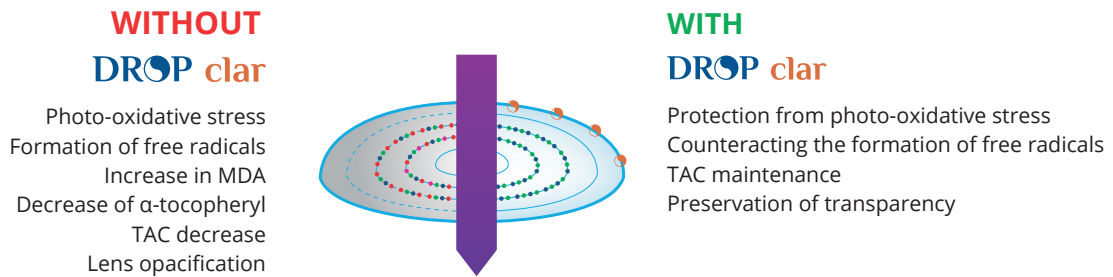
10 ml  
preservative free  
multidose dispenser

can be  
used with  
contact lenses

**CE** Class IIB Medical Device

**Patents:** Italy, Europe, USA, Russia,  
Australia, South Africa, Brazil.

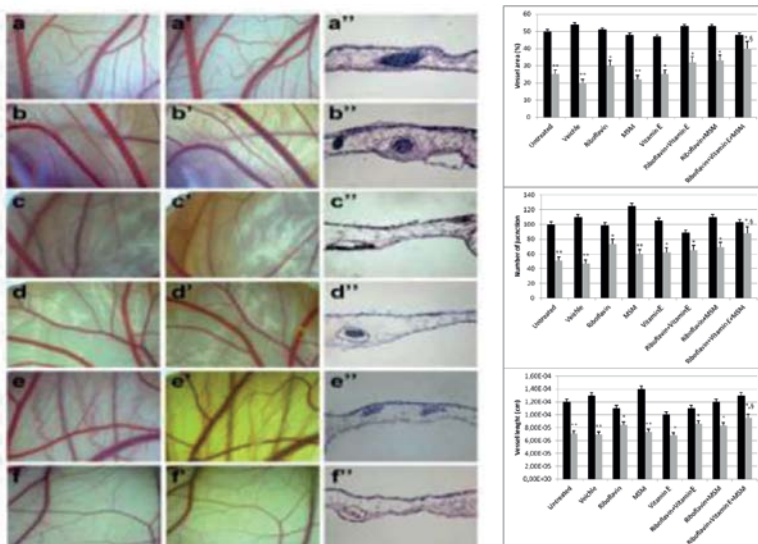
The table below shows the effects of photo-oxidative damage in the crystalline lens exposed to UVR. Compared to the non-irradiated control group, the group irradiated without DROPClar® showed a significant decrease in antioxidant markers of the lens, such as α-tocopheryl and TAC (Total Antioxidant Capacity) and a concomitant marked increase of MDA (Malondialdehyde). Instead, the irradiated groups treated with DROPClar® showed values close to the control group, proving the solution effective against photo-oxidative damage.



GROUPS

PARAMETERS	Control	Irradiated without DROPClar	Irradiated 30 min with DROPClar	Irradiated 60 min with DROPClar
α-tocopheryl, μmol/mg	0.120 ± 0.001	0.012 ± 0.001	0.110 ± 0.005	0.078 ± 0.002
Malondialdehyde, μmol/mg	1.527 ± 0.002	1.837 ± 0.023	1.517 ± 0.018	1.647 ± 0.012
Total Antioxidant Capacity, μmol/mg	140.170 ± 0.176	90.101 ± 0.163	138.830 ± 0.546	122.503 ± 0.346

F. Vizzarri, M. Palazzo, S. Bartollino, D. Casamassima, B. Parolini, P. Troiano, C. Caruso, C. Costagliola, "Effects of an Antioxidant Protective Topical Formulation on Eye Exposed to Ultraviolet-Irradiation: a Study in Rabbit Animal Model", *Physiol. Res.* 67: 457-464, 2018.



IN PRESS PUBLICATION

Only the association of riboflavin, Vitamin E and MSM is capable of a statistically higher oxidative stress protection, proving that DROPClar® has an optimal formulation to protect the crystalline lens against photo-oxidative damage.

(Ostacolo C, Caruso C et al. "Assessment of UV protection by chick embryo model").

CAM images: Chicken embryos before (left) and after UV irradiation (center). Right: orthogonal CAM sections: Control group(a); treated with DROPClar®(b); treated with different combinations of active ingredients(c-f).



**SERVImed Industrial S.p.A.**

Via Tempio del Cielo 3/5, 00144 Rome (Italy)  
Tel: +39 06 92595490 Fax: +39 06 89360010  
Email: [info@servimedindustrial.com](mailto:info@servimedindustrial.com)  
[www.servimed-industrial.com](http://www.servimed-industrial.com)



**Iromed Group S.r.l.**

Via Tempio del Cielo 3/5, 00144 Rome (Italy)  
Email: [info@iromedgroup.com](mailto:info@iromedgroup.com)  
[www.iromedgroup.com](http://www.iromedgroup.com)