VALEDA®

Light Delivery System

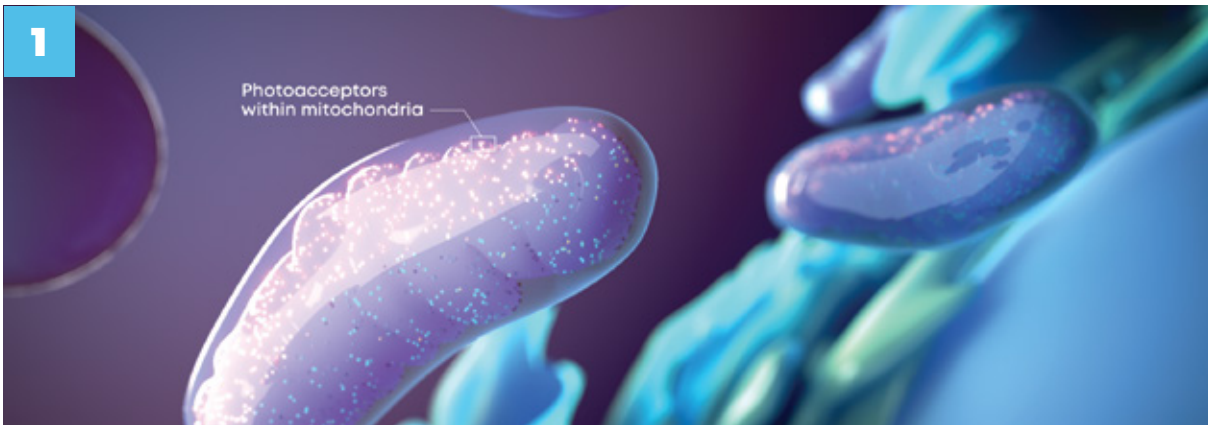
Photobiomodulation Mechanisms of Action

Valeda® photobiomodulation (PBM) treatment harnesses the power of light to target disease at the cellular level.

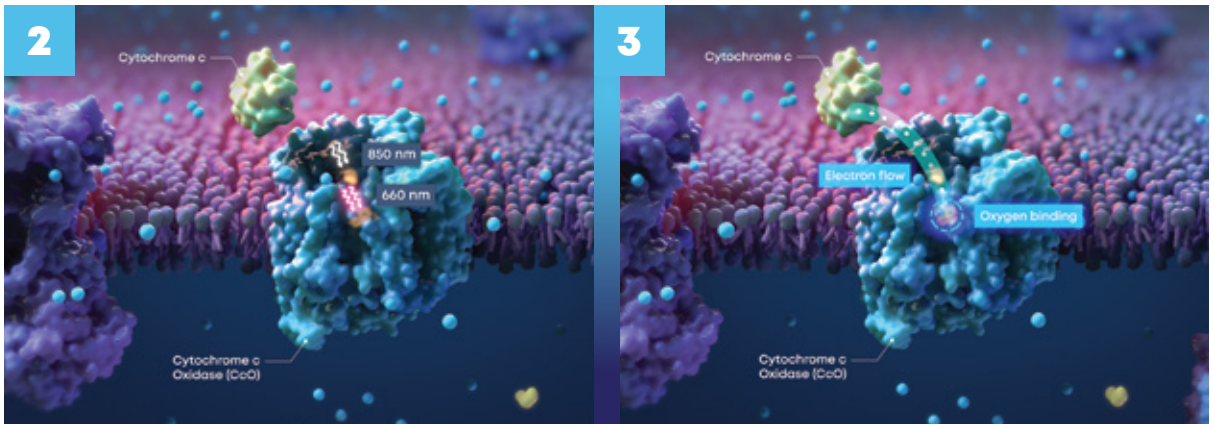
Valeda delivers select wavelengths which act on cellular mechanisms important to age-related macular degeneration (AMD).

Wavelength 850[1]	Wavelength 660[1]	Wavelength 590[2, 3]
Drives electron transfer (Cu_A), stimulates metabolic activity (ATP), and inhibits inflammation and cell death	Promotes O_2 binding (Cu_B), stimulates metabolic activity (ATP), and inhibits inflammation and cell death	Inhibits VEGF expression and promotes nitric oxide generation

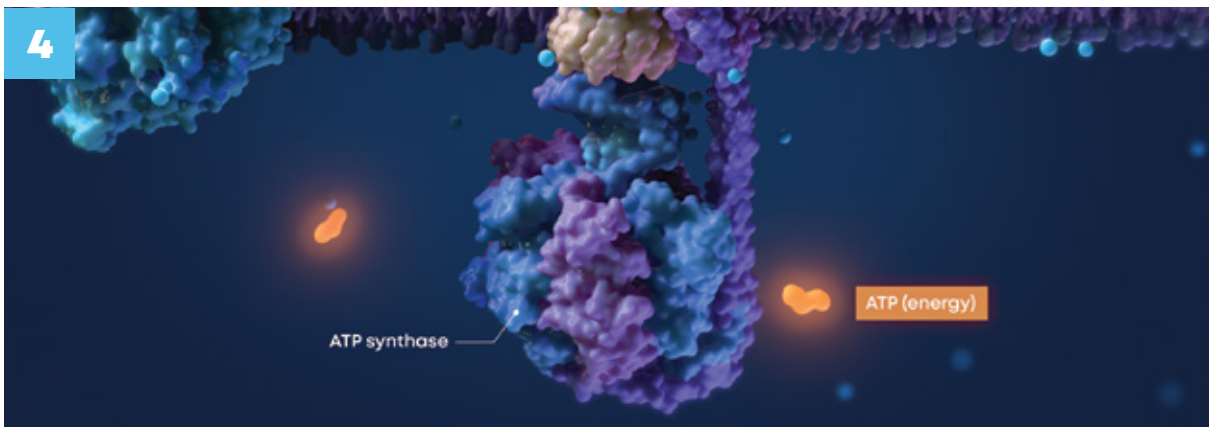
PBM activates photoacceptors in the mitochondrial respiratory chain.



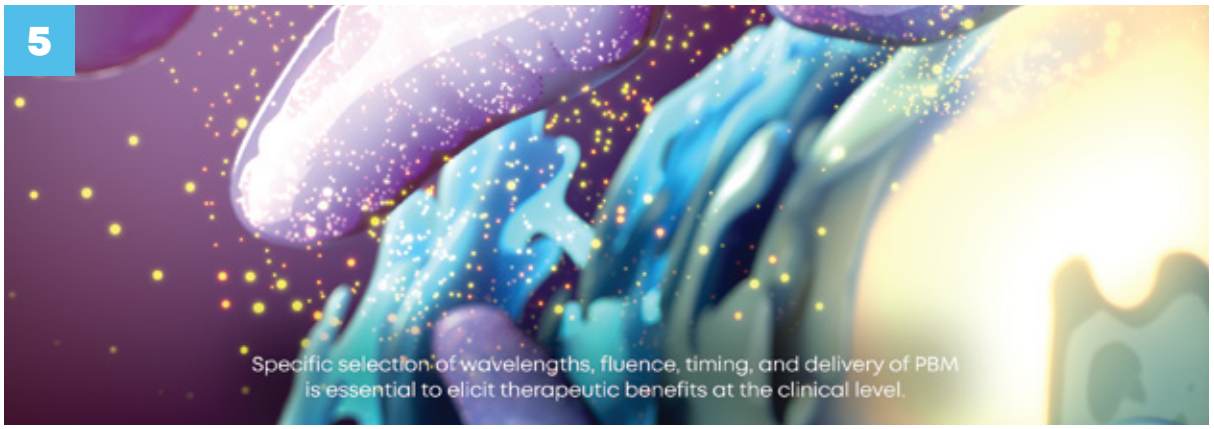
The specific wavelengths increase enzymatic activity at two separate sites on cytochrome c oxidase (CcO): CuA and CuB.



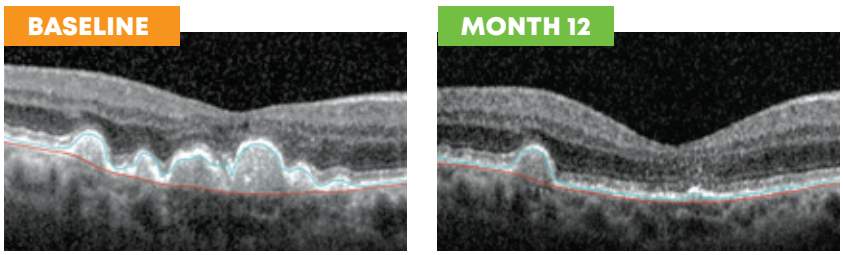
Increased CcO helps drive the generation of the proton gradient required by ATP synthase to produce energy.



Restoring the production of energy and signaling molecules triggers secondary effects that sustain improved cell function.



Treatment with Valeda improves visual acuity and contrast sensitivity and reduces central drusen volume.



Pathology and Clinical Benefits as Seen in an Individual Patient.[4]

Valeda harnesses the power of light to offer a brighter horizon for patients with dry AMD.

INDICATIONS FOR USE
The indicated use is for treatment of ocular damage and disease using photobiomodulation, including inhibition of inflammatory mediators, edema or drusen deposition; improvement of wound healing following ocular trauma or surgery, and increase in visual acuity and contrast sensitivity in patients with degenerative diseases such as dry age-related macular degeneration.

REFERENCES:
1. Wong-Riley et al., J Biol Chem.v280.2005; 2. McDaniel et al., Am Soc Laser Med Surg Mtg. 2006; 3. Ball et al., J Photochem Photobiol B Biol.v102.2012; 4. Markowitz, S. et al., Retina. 2020; 40(8):1471-1482.
PBM MOA Support References: Begum, R. et al., PLOS One. 2013; 8(2):e57828; Fitzgerald, M. et al., Rev Neurosci. 2013; 24(2):205-226; Hamblin, M. Photochem Photobiol. 2018; 94(2): 199-212; Karu, T. et al., Lasers Surg Med. 2005; 36(4):307-314; Karu, T. Photochem Photobiol. 2008; 84(5):1091-1099; Wong-Riley, M.T.T et al., J Biol Chem. 2005; 280(6):4761-4771.

VALEDA® | www.lumithera.com Not for sale in the USA | LumiThera®

LumiThera, Inc.
19578 10th Avenue NE, Suite 200
Poulsbo, Washington 98370 USA

CE 2797

EC REP Emergo Europe
Prinsessegracht 20, 2514 AP
The Hague, The Netherlands

MKT-0068-03 REV A