



QMR® IS AN INNOVATIVE AND UNIQUE TECHNOLOGY

Resono Ophthalmic is the sole company worldwide that applies the revolutionary QMR® technology to the treatment of eye disorders.

Clinical studies have proved significant benefits for patients with dry eye disease. ^{3,4,5,6}

Developed and patented by: **Telea Electronic Engineering**, an Italian company headquartered in Sandrigo (VI).

With over three decades of research and development in collaboration with Universities, Research Centers and hospitals, Telea Electronic Engineering made a remarkable discovery: the Quantum Molecular Resonance (QMR), a novel physical effect. This cutting-edge technology interacts with molecular (atomic) bonds using an electric field with a spectrum of frequencies transmitted simultaneously (all harmonics from 4 MHz to 64 MHz).



Resono Ophthalmic S.r.l.
Via Leonardo da Vinci, 13
36066 Sandrigo (VI) - Italy
Ph. + 39 0444 1241947
contact@resono.it
www.resono.it



Follow us



Rev 01/2023 Subject to technical changes as part of product development, as well as errors and omissions.



QMR® PATENTED REVOLUTIONARY TECHNOLOGY

WHAT MAKES QMR® UNIQUE?

What makes QMR® technology unique and innovative is its capacity to stimulate biological tissue, promoting the **anti-inflammatory effect** and stimulating the **natural regeneration** of cells and tissues.

BIOLOGICAL SAFETY

QMR® Technology is proven to be **biologically safe**. Rigorous studies on chromosomes, apoptosis, proteins, and 28,000 genes have affirmed its biological safety, assuring the absence of cellular damage in patients.²

QUANTUM MOLECULAR RESONANCE

QUANTUM: it is the smallest discrete unit of every energy solely determined by its frequency ($E_{\text{quantum}} = h \times f$). The higher the frequency, the greater the energy of quanta. QMR® utilizes its broad spectrum to create a variety of quanta, which interact with the biological tissue.

MOLECULAR: QMR® acts at molecular level, interacting with the atomic bonds of the biological tissue

RESONANCE: explains how quanta interact with the molecular (atomic) bonds. Thanks to the resonance effect, energy is transferred without increasing the kinetic energy and, consequently, without generating heat.



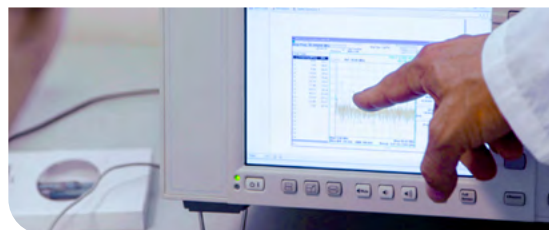
ANTI-INFLAMMATORY EFFECT

Inflammation plays a key role in what is called the “vicious circle of Dry Eye”.

Inflammation leads to tear film instability and ocular surface damage. As the eyes become drier, the level of inflammation increases. This heightened inflammation further exacerbates the dryness of the eyes.

QMR® interrupts this circle through its anti-inflammatory effect.

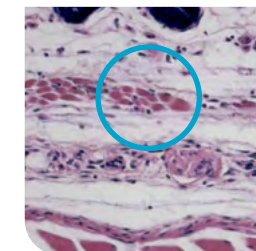
QMR® acts to modulate the macrophage polarization from pro-inflammatory M1 phenotype towards the anti-inflammatory M2 phenotype. Macrophages M2 reduce inflammation, downregulating inflammatory cytokines and releasing Anti-inflammatory cytokines.^{*1}



NATURAL REGENERATIVE EFFECT

QMR® emits packets of energy quanta capable of changing the ions concentration in the intracellular/ extracellular matrix (biochemical effect) which leads to a significant changes in transmembrane potential of the target cells.^{*2}

These changes trigger a metabolic pathways that stimulates MSCs (Mesenchymal Stromal Cells). Subsequently, MSCs differentiate into the needed cells. Through stem cells proprieties, the regenerated biological tissue has the same characteristics and functionality of the original one.



Studies on tissue showed that after a course of a QMR® stimulation, the parvocellular infiltrate (black dots) were observed inside the muscle bundles. This is a result of the regenerative process in progress.

*1. Sella et al., PloS ONE, 2018

*2. Paolucci et al., Antioxidants, 2023

*3. Pedrotti et al., Br. J. Ophthalmol., 2017

*4. Ferrari et al., Cornea, 2019

*5. Trivili et al., J. of Optometry, 2022

*6. Kavroulaki et al., Cureus 2023