



The synthetic cannabinoid WIN55212-2 decreases the intraocular pressure in human glaucoma resistant to conventional therapies

1. Anna Porcella¹,
2. Chiara Maxia²,
3. Gian Luigi Gessa³ and
4. Luca Pani³

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Author Information

1

Center for Neuropharmacology C.N.R, B.B. Brodie Department of Neuroscience, University of Cagliari, via Porcell 4, 09124-I Cagliari, Italy

2

Ophthalmology Division A.S.L. 8, Ospedale S. Michele, via Peretti 12. 09124-I Cagliari, Italy

3

Neuroscienze Scarl, Cagliari, Italy

* : Dr Luca Pani, Center for Neuropharmacology C.N.R, B.B. Brodie Department of Neuroscience, University of Cagliari, via Porcell 4, 09124-I Cagliari, Italy E.mail: panil@unica.it (<mailto:panil@unica.it>)

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- Abstract
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Abstract

The search for new ocular hypotensive agents represents a frontier of current eye research because blindness due to optic neuropathy occurs insidiously in 10% of all patients affected by glaucoma. Cannabinoids have been proposed to lower intraocular pressure by either central or peripheral effects but a specific mechanism for this action has never been elucidated. We recently demonstrated the presence of the central cannabinoid receptor (CB₁) mRNA and protein in the human ciliary body. In the present study we show that the synthetic CB₁ receptor agonist, WIN 55212-2, applied topically at doses of 25 or 50 µg ($n = 8$), decreases the intraocular pressure of human glaucoma resistant to conventional therapies within the first 30 min ($15 \pm 0.5\%$ and $23 \pm 0.9\%$, respectively). A maximal reduction of $20 \pm 0.7\%$ and $31 \pm 0.6\%$, respectively, is reached in the first 60 min. These data confirm that CB₁ receptors have direct involvement in the regulation of human intraocular pressure, and suggest that, among various classes of promising antiglaucoma agents, synthetic CB₁ receptor agonists should deserve further research and clinical development.

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