

## **24-hour evaluation of the ocular distribution of (14)c-labeled bromfenac following topical instillation into the eyes of New Zealand white rabbits.**

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**PURPOSE:** The aim of this study was to determine the distribution and concentrations of bromfenac ophthalmic solution in ocular tissues following topical instillation in New Zealand White (NZW) rabbits. **Design:** Two animal studies were conducted. **METHODS:** A single 50- $\mu$ L (14)C-bromfenac ophthalmic solution (20-25  $\mu$ Ci or 0.09%) was administered into the right eyes of 14-18 randomly assigned NZW rabbits. At various time points, ocular tissues were collected and analyzed for (14)C-bromfenac contents. Ocular tissues were combusted and the amount of radioactivity was determined by liquid scintillation counting (LSC). Aqueous-humor samples were directly transferred to LSC vials. **RESULTS:** Peak concentrations of (14)C-bromfenac were observed in the aqueous humor and most ocular tissues at or before 2-hours. The highest concentrations were in the cornea, conjunctiva, and sclera. Similar amounts were detected in the aqueous humor, iris-ciliary body, choroid, and, to a slightly lesser degree, in the retina. Measurable amounts of bromfenac were detected in all samples at the 24-hours time point ( $>$  or  $=$ 0.001  $\mu$ g equivalent/g). **CONCLUSIONS:** Significant penetration and measurable amounts of (14)C-bromfenac were detected in all ocular tissues over 24 h, including the sclera, choroid, and retina. These results strongly suggest the utility of bromfenac ophthalmic solution 0.09% in treating inflammation of both the anterior and posterior ocular segments.

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