

# Redox Biology, Bioanalytical Chemistry

## Research Topics

- Effects of free radicals and antioxidants in living systems
  - Analytical methods for detection and quantification of redox-active molecules in biological matrices
- Thiol antioxidants for the treatment of age-related eye disorders
  - Eye drop formulation for non-invasive prevention/reversal of cataracts
  - *In vivo* and *in vitro* investigations of drug delivery vehicles to increase effectiveness of thiol drug candidates for cataract therapy

## Facilities

Schrenk Hall, Room 230

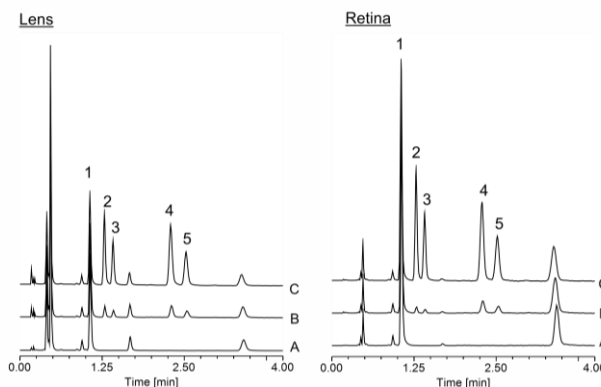
Center for Biomedical Research

## PoC

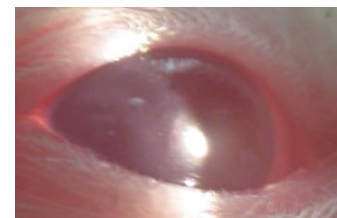
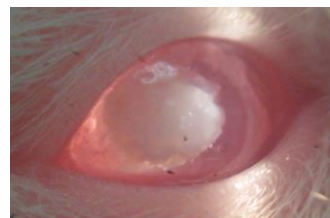
- Dr. Nuran Ercal, Richard K. Vitek/FCR Endowed Chair in Biochemistry, Department of Chemistry
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## Funding

- Environmental Protection Agency, National Eye Institute (NEI), National Institute of Health (NIH)



HPLC investigation of thiol drug (tiopronin) pharmacokinetics in ocular tissues.



Novel thiol antioxidant NACA reverses cataracts in Wistar rats.

## Keywords

- antioxidants, thiol drugs, cataracts, drug delivery, bioanalytical chemistry, oxidative stress

## Recognitions/Significant Achievements

- Multiple awards, Missouri S&T Outstanding Teacher Award
- Tappmeyer Teaching Award
- Woman of the Year Award, Missouri S&T, 2003

## Areas for Potential Collaboration

- Materials science, nanomaterials, polymer chemistry, *in vivo* imaging, ophthalmology