The Southern California Pharmaceutical Discussion Group (SCPDG) Announces our January 29, 2026, Meeting:

Presentation 1 (15 Min)

Probing Oxidation-Induced Structural Changes in Human γS-crystallin using NMR

Presented by
Yeonseong (Catherine) Seo
5th-year Ph.D. candidate in chemistry (chemical biology)
University of California, Irvine

Abstract: The human eye lens owes its transparency to densely packed crystallin proteins that maintain exceptional solubility despite minimal turnover. Over time, post-translational modifications such as oxidation can reduce their solubility, leading to aggregation and cataract formation. Here, we investigate the oxidation of W163 in γS-crystallin, a residue previously shown to oxidize upon γ-irradiation. To model this damage, we site-specifically incorporated 5-hydroxytryptophan (5-HTP) at residue 163 using genetic code expansion (GCE). Biophysical analyses revealed that the oxidized variant exhibited reduced thermal and chemical stability and aggregated at lower temperatures compared to the wildtype. $^{1}H–^{15}N$ HSQC experiments further indicated that W163 oxidation disrupts the local hydrogen-bond network, perturbing the structural integrity of the C-terminal domain. Our findings provide valuable insights to the molecular mechanisms of age-related cataracts, laying the groundwork for targeted interventions.

Biography: Catherine is a 5th-year Ph.D. candidate in Chemistry at UC Irvine, where her research focuses on understanding how proteins in our eye lens aggregate to cause cataracts using a range of biophysical characterization tools. Before her current project, she worked on developing bioorthogonal probes for labeling and imaging various cellular processes. Outside of research, she is interested in translating innovations into real-world solutions, and her extracurricular involvement with Beall Applied Innovation and Biotech Connection Los Angeles has helped bring academic discoveries closer to market. She also enjoys mentoring and community building, and she has led several initiatives that support and connect graduate students through organizations like Graduate International Connection, ChemUNITY, and Competitive Edge. With the little free time she has, she likes to hike, garden, and sing!

Presentation 2 (45 Min)

Ophthalmic Drug Products: Tests, Methods, and Acceptance Criteria

Presented By
Huahua Jian
Director of Analytical R&D
AbbVie, Irvine, CA

Abstract: This presentation will discuss the development of tests, specifications and methods for the quality control of ophthalmic products, including both small molecule and biologics drug products. The specification setting focuses on critical quality attributes (CQAs) of ophthalmic products in different dosage forms, such as solution, suspension, emulsion, and sustained release implant. Applicable regulatory guidelines will also be discussed.

Biography: Huahua Jian, PhD, currently serves as Director of Analytical R&D in AbbVie, where she leads analytical development of synthetic molecule drugs and complex dosage forms, from pre-clinical through commercialization. Huahua has over 20 years of experience, with focuses on advanced analytical characterization, impurity profiling, and application of mass spectrometry and NMR. She is an invited author and contributor to peer-reviewed journals and reference texts, including an Elsevier book chapter on ophthalmic drug products, with publications in Journal of Organic Chemistry, Journal of Pharmaceutical Sciences, Chemistry of Materials, and Journal of Analytical Toxicology. Dr. Jian holds a PhD in Organic Chemistry from Rice University.

Date: Thursday, January 29,2026
Location: Waters Technologies District Office, 3540 Howard Way, Suite 100, Costa Mesa, CA 92626
Agenda: This is a hybrid event. Check-in and Networking from 4:00-4:30 PM PT. Presentation and Discussion will be from 4:30-6:00 PM PT. Login will open at 4:20 PM PT.

Registration: Please register by Noon, Tuesday, January 27, using the link below or copy and type into your browser: https://www.eventbrite.com/e/ophthalmic-drug-products-tests-specifications-and-methods-tickets-1980493755135?aff=oddtdtcreator

Important Notes: You must register to receive an emailed Zoom link for virtual attendance. You will receive the Zoom link after registration closes at noon on Tuesday, January 27th. If you need assistance logging in or during the presentation, please text me at 714 606 5907.

Social Media Links:
https://www.linkedin.com/groups/6601347/

Past Presentations and Calendar of Events are located on our web page at:
https://www.aaps.org/aaps/membership-and-community/regional-discussion-groups/southern-california?CLK=c1e0e09f-9f30-4360-8fe2-1daebb1091fa