

5th INTERNATIONAL CONFERENCE ON MOLECULAR
STRUCTURAL BIOLOGY (ICMSB2003)

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The international conference on molecular structural biology (ICMSB) is the fifth in the series, which takes place every two years in Vienna. It was organized by the biochemistry subgroup of Austrian Chemical Society in cooperation with the Federal Ministry of Social Security and Generations. It was held on 3-7 September, 2003 in the Festsaal hall in the Austrian Federal Office Building. About three hundred participants from different countries attended this conference.

An exhibition of scientific equipment, materials and books was held in association with the conference.

The opening ceremony was an honorary lecture titled: Antibody Catalyzed Ozone Formation, Relevance for Atherosclerosis and Amyloidosis, and the closing session was about Folding and Disease.

The scientific programme contained a wide range of structural methodologies and their applications to the problems at the forefront of molecular structural research. The rapidly developing area of structural genomics as well as the new technology of free electron lasers complement the more traditional sessions covering the latest developments in structure determination, folding and structural molecular biology.

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The National Review of Criminal Sciences, Volume 46, Number 3, November 2003.

The ICMSB programme included eight sessions: six for presentations and two for posters.

The lecture sessions comprised the following topics:

Sessions I & II: Protein Structures

1. Structures That Translocate Proteins and Viruses Across Cell Membranes .
2. Structure and Function of DJ-1, the Protein Whose Gene is Mutated in Autosomal Recessive Early-Onset Parkinson's Disease.
3. Structural Proteomics: A Tool for Genome Annotation.
4. Solution Structure of the Mitotic Regulator hPin 1 and its in vivo Inhibition by Anti-Cancer Drugs.
5. NMR Spectroscopy of Membrane Proteins.
6. Evidence for Binding of Tricyclic Aromatic Compounds to Helix 1 of Prion Protein.

Session III: Free Electron Lasers in Structural Biology

1. Next Generation Synchrotron Light Sources-Structural Biology with Ultra-Bright and Ultrashort X-rays.
2. Free Electron Lasers and Biology.

Session IV: Structural Genomics

1. Genome-Driven Structure Analysis of Human Proteins.
2. Using Structure to Elucidate Function.
3. Automated Biomolecular NMR Spectroscopy. New Routes to Structures of Protein and Protein Complexes.
4. Structural Genomics of DNA Damage Response in Escherichia coli.
5. How Protein Crystals Can Help Structure Prediction: The YAMBER Force Field.

Session V: Nucleic Acid Structures

1. Design and Use of Zinc Finger Transcription Factors.
2. Biophysical Studies of Telomerase RNA Structure and Mutations Linked to Disease.
3. Adaptive Recognition of RNA by Antibiotics, Peptides and Proteins.
4. NMR Applied to Large Biological RNAs: Structure of HCV IRES Domain 11, a 25 kDa RNA.
5. Structural Basis of LNA (Locked Nucleic Acid) Triplex Formation.

Session VI: Folding and Disease

1. Sequence Determinants of Aggregation and Amyloid Formation.
2. Protein Misfolding and Its Links with Human Disease.
3. Metabolite Initiation of Protein Misfolding in Alzheimer's Disease.
4. Protein Folding Atomic Resolution.

The posters formed two separate sessions. All posters with numbers < 50 appeared in poster session I comprised subjects about protein structures and structural genomics. The remaining posters with numbers 50 to 100 appeared in poster session II included subjects about nucleic acid structures, structural molecular biology, folding and disease. Three prizes of 100 EUR each awarded for the best posters in term of content and presentation.

Finally, a round table discussion was held about challenges and perspectives for structural biology in the 21st century.