Marianne Schiffer

PROFESSIONAL BIOGRAPHY

EDUCATIONAL BACKGROUND:

Institution and Location	Degree	Year	Field of Study
Petric Lajos Chem. Ind. Tech. School Budapest, Hungary	Matura (Equiv.B.S.)	1955	Organic Chemistry
Smith College, Northampton, MA	M.A.	1958	Organic Chemistry
Columbia University, New York, NY	Ph.D.	1965	Biochemistry

PROFESSIONAL EXPERIENCE:

1965-present	Biosciences Division, Argonne National Laboratory
1965-1967	Research Associate
1968-1974	Assistant Biochemist
1974-1986	Biophysicist
1986-present	Senior Biophysicist
1986-1999	Head Biophysics Section
1973-1974	Visiting Scientist at the Max-Planck Institute for Biochemistry in Munich, West Germany
1982-1992	Lecturer, Dept. of Biochemistry, Molecular Biology and Cell Biology, Northwestern University

HONORS AND AWARDS:

1958-1964	NIH Predoctoral Fellowship
1986	ANL Pacesetter Award
1986	ANL Director's Award for Outstanding Research
1992	University of Chicago Distinguished Performance Award

PUBLICATION LIST:

Refereed Publications

1. **Schiffer, M**. The determination of the crystal and molecular structure of DL-β-fluoromalic acid by x-ray diffraction. Ph.D. Thesis, Columbia University (1965).

2. Monahan, J. E., **M. Schiffer**, and J. P. Schiffer. On the scaling of x-ray photographs. *Acta Cryst.* **22**, 322 (1967).

3. **Schiffer, M**., and A. B. Edmundson. Use of helical wheels to represent the structures of proteins and to identify segments with helical potential. *Biophys. J.* **7**:121-135 (1967).

4. **Schiffer, M**. and A.B. Edmundson. Correlation of amino acid sequence and conformation in tobacco mosaic virus. *Biophys. J.* **8**:29-39 (1968).

5. **Schiffer, M**., K. D. Hardman, M. K. Wood, A. B. Edmundson, M. E. Hook, K. R. Ely, and H. F. Deutsch. A preliminary crystallographic investigation of a human λ-type Bence-Jones protein. *J. Biol. Chem.* **245**:728-730 (1970).

6. Edmundson, A.B., M.K. Wood, **M. Schiffer**, K.D. Hardman, C.F. Ainsworth, K.R. Ely, and H.F. Deutsch. A crystallographic investigation of a human IGG immunoglobulin. *J. Biol. Chem.* **245**:2763-2764 (1970).

7. **Schiffer, M.** and A. B. Edmundson. Prediction of α-helices in glucagon. *Biophys. J.* **10**:293-295 (1970).

8. Hardman, K.D., M.K. Wood, **M. Schiffer**, A.B. Edmundson, and C. Ainsworth. Structure of concanavalin A at 4.25Å resolution. *Proc. Natl. Acad. Sci. USA* **68**:1393-1397 (1971).

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10 Edmundson, A.B., **M. Schiffer**, K.R. Ely, and M.K. Wood. Structure of a Lambda-type Bence-Jones protein at 6 Å resolution. *Biochemistry* **11**:1822-1827 (1972).

11. Ely, K.R., R.L. Girling, **M. Schiffer**, D.E. Cunningham, and A.B. Edmundson. Preparation and properties of crystals of a Bence-Jones dimer with mercury inserted into the interchain disulfide bond. *Biochemistry* **12**:4233-4237 (1973).

12. **Schiffer, M**., R. L. Girling, K. R. Ely, and A. B. Edmundson. Structure of a lambda-type Bence-Jones protein at 3.5 angstrom resolution. *Biochemistry* **12**:4620–4631 (1973).

13. Colman, P.M., O. Epp, H. Fehlhammer, W. Bode, **M. Schiffer**, E.E. Lattman, T.A. Jones, and W. Palm. X-ray studies on antibody fragments. *FEBS Lett*. **44**:194-199 (1974).

14. Edmundson, A.B., K.R. Ely, R.L. Girling, E.E. Abola, **M. Schiffer**, F.A. Westholm, M.D. Fausch, and H.F. Deutsch. Binding of 2,4-dinitrophenyl compounds and other small molecules to a crystalline lambda-type Bence-Jones dimer. *Biochemistry* **13**:3816-3827 (1974).

15. Edmundson, A.B., K.R. Ely, R.L. Girling, E.E. Abola, **M. Schiffer**, and F.A. Westholm. Structure and binding properties of a Lambda-type Bence-Jones dimer. Progress in Immunology II, Vol. 1, L. Brent and J. Holborow, eds., North-Holland Publishing Company, Amsterdam, The Netherlands, pp. 103-113 (1974).

16. Epp, O., P.M. Colman, H. Fehlhammer, W. Bode, **M. Schiffer**, R. Huber, and W. Palm. Crystal and molecular structure of a dimer composed of the variable portion of the Bence-Jones protein Rei. *Eur. J. Biochem.* **45**:513-524 (1974).

17. Fehlhammer, H., **M. Schiffer**, O. Epp, P. M. Colman, E. E. Lattman, P. Schwager, and W. Steigemann. The structure determination of the variable portion of the Bence-Jones protein Au. *Biophys. Struct. Mech.* **1**:139–146 (1975).

18. Epp, O., E. E. Lattman, **M. Schiffer**, R. Huber, and W. Palm. The molecular structure of a dimer

composed of the variable portions of the Bence-Jones protein Rei refined at 2.0 Å resolution. *Biochemistry* **14**:4943–4952 (1975).

19. Edmundson, A.B., K.R. Ely, E.E. Abola, **M. Schiffer**, and N. Pangiotopoulos. Rotational allomerism and divergent evolution of domains in immunoglobulin light chains. *Biochemistry* **14**:3953-3961 (1975).

20. Edmundson, A.B., K.R. Ely, E.E. Abola, **M. Schiffer**, N. Panagiotopoulos, and H.F. Deutsch. Conformational isomerism, rotational allomerism, and divergent evolution in immunoglobulin light chains. *Fed. Proc.* **35**:2119-2123 (1976).

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59. Huang, D.-B., C.-H. Chang, C. Ainsworth, A. T. Brünger, M. Eulitz, A. Solomon, F. J. Stevens, and **M. Schiffer**. Comparison of crystal structures of two homologous proteins: structural origin of altered domain interactions in immunoglobulin light-chain dimers. *Biochemistry* **33**:14848–14857 (1994).

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