

SCIENTIFIC PUBLICATIONS

Chapters in collective volumes

1. "Lipid-Protein Interaction During Platelet Activation"
G. Fleisher, I. Nathan, A. Livne, A. Dvilansky and **A.H. Parola**
in: *"Platelets: Cellular Response Mechanisms and Their Biological Significance"*.
Edited by A. Rotman, F.A. Meyer, C. Gitler and A. Silberberg, John Wiley & Son Ltd., 95-106 (1980).
2. "Fluorescent Affinity Labeling of Adenosine Deaminase by 5-Dimethylaminonaphthalene-1-sulfonyl-3'-o-adenosine"
G. Skorka, P. Shuker, D. Gill and **A.H. Parola**
in: *"Liposomes Drugs and Immunocompetent Cell Function"*
Edited by C. Nicolau and A. Paraf, 108 (1981).
3. "Membrane Dynamic Alterations Associated with Cell Transformation and Malignancy"
A.H. Parola
in: *"Membrane in Tumor Growth"*. Edited by T. Galeotti, G. Neri and S. Papa,
Elsevier Biomedical Press, Amsterdam, 69-80 (1982).
4. "Dynamic Interaction of Fluorescently Labeled Adenosine Deaminase in Intact Human Erythrocytes: Relation to Abnormal Activity in Malignant Cells"
A.H. Parola, G. Skorka, P. Shuker and D. Gill
in: *"Physical Methods on Biological and Model Systems"*. Edited by F. Conti, W.E. Blumberg, J. de Gier and F. Pocchiari, NATO ASI-Series, Series A. Life Sciences, 71, pp. 245-250. Plenum Press, N.Y. and London (1985).
5. "Membrane Lipid-Protein Interactions"
A.H. Parola
in: *"Biomembranes, Physical Aspects"*, Edited by M. Shinitzky, pp. 159-277, Balaban Press VCH, New York and Cambridge (1993).
6. "Electric and Magnetic Fields and Carcinogenesis"
A.H. Parola and A. Markel
in: *"Biological Effects of Electric and Magnetic Fields: Beneficial and Harmful Effects"*,
Edited by D.O. Carpenter and S. Ayrapetyan, Vol. 2, pp. 177-197, Academic Press (1994).
7. "High Photosensitivity of the Active Site-Bound Pyridoxal Phosphate in *Escherichia coli* Tryptophanase"
G. Y. Gdalevsky, T. Ben-Kasus, Y.M. Torchinsky and **A.H. Parola**.
in *"Spectroscopy of Biological Molecules: Modern Trends"* Edited by Pedro Carmona, Raquel Navarro and Antonio Hernanz, pp. 183-184, Kluwer Academic Publishers, Dordrecht, The Netherlands (1997).

Refereed articles in scientific journals

8. "Photoreduction by Amines"
S.G. Cohen, **A. Parola** and G.H. Parsons
Chem. Rev., **73**, 141-161 (1973).
9. "Photoreduction by Hydrzonium Ions, Quenching by Hydrazines"
S. Ojanpera, **A. Parola** and S.G. Cohen
J. Am. Chem. Soc., **96**, 7379-7380 (1974).
10. "Effect of Concentration of Amine and of Medium in Photoreduction of Ketones by Amines"
A.H. Parola, A.W. Rose and S.G. Cohen

J. Am. Chem. Soc., **97**, 6202-6209 (1975).

11. "Microviscosity of the Membrane Lipids of Normal, Transformed and Revertant 3T3 Cells"

P. Fuchs, **A. Parola**, P.W. Robbins and E.R. Blout

Proc. Nat. Acad. Sci. USA, **72**, 3351-3354 (1975).

12. "Nanosecond Fluorescence Lifetime and Anisotropy Studies of Normal, Transformed and Revertant 3T3 Cells"

A.H. Parola, P.W. Robbins and E.R. Blout

Israel J. Med. Sci., **12**, 1362 (1976).

13. "Membrane Dynamic Alteration Associated with "Transformation" by BUdR in BUdR-Dependent Cells: Fluorescence Polarization Studies with a Lipid Probe"

S.L. Rosenthal, **A.H. Parola**, E.R. Blout and R.L. Davidson

Exp. Cell Res., **112**, 419-429 (1978).

14. "Membrane Dynamic Alterations Associated with Viral Transformation and Reversion: Decay of Fluorescence Emission and Anisotropy Studies of 3T3 Cells"

A.H. Parola, P.W. Robbins and E.R. Blout

Exp. Cell Res., **118**, 205-214 (1979).

15. "Membrane Microenvironmental Changes During Activation of Human Blood Platelets by Thrombin; A Study with a Fluorescent Probe"

I. Nathan, G. Fleisher, A. Livne, A. Dvilansky and **A.H. Parola**

J. Biol. Chem., **254**, 9822-9828 (1979).

16. "Membrane Dynamic Alteration Associated with the Tumorigenicity of Polyoma Transformed and Revertant Hamster Cells"

A.H. Parola and M. Souroujon

Int. J. Cancer, **24**, 800-805 (1979).

17. "Effect of Solvent in Photoreduction and Quenching of Benzophenone by Triethylamine, 1-Azabicyclo (2,2,2) Octane and 1,4-Diazabicyclo-(2,2,2) Octane"

A.H. Parola and S.G. Cohen

J. Photochem., **12**, 41-50 (1980).

18. "Membrane Dynamic Alteration Associated with Activation of Human Platelets by Thrombin"

I. Nathan, G. Fleisher, A. Dvilansky, A. Livne and **A.H. Parola**

Biochim. Biophys. Acta, **598**, 417-421 (1980).

19. "Fluorescent Substrate Analogue For Adenosine Deaminase: 5-Dimethylaminonaphthalene-1-Sulfonyl-3'-O-Adenosine"

G. Skorka, P. Shuker, D. Gill, J. Zabicky and **A.H. Parola**

Biochemistry, **20**, 3103-3109 (1981).

20. "Activation of Human Lymphocytes by Concanavalin A or Purified Protein Derivative Results in No Alteration of Fluorescence Polarization of Lipid Probes Although the Electrophoretic Mobility of the Cells is Changed"

A.H. Parola, J.H. Kaplan, S.H. Lockwood and E.E. Uzgiris

Biochim. Biophys. Acta, **649**, 616-624 (1981).

21. "Laser Photobleaching of Human Serum; Hypersensitive Fluoroimmunoassays"

A.H. Parola and E.E. Uzgiris

Anal. Biochem., **138**, 386-389 (1984).

22. "Homeoviscous Adaptation, Growth Rate and Morphogenesis in Bacteria"

A. Zaritsky, **A.H. Parola** and H. Masalha

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23. "Adenosine Deaminase-Complexing Protein from Bovine Kidney: Isolation of Two Distinct Subunits"
M.L. Weisman, V.R. Caiolfa, and **A.H. Parola**
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24. "Adenosine Deaminase in Cell Transformation: Biophysical Manifestation of Membrane Dynamics".
N. Porat, D. Gill and **A.H. Parola**
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25. "Laser Photobleaching Leads to A Fluorescence Grade Adenosine Deaminase"
A.H. Parola, V.R. Caiolfa, I. Bar and S. Rosenwaks
Anal. Biochem., **181**, 383-388 (1989).
26. "The Protonated Form of 1-N⁶-Etheno-[Erythro-9-(2-Hydroxy-3-Nonyl)] Adenine is Identified at the Active Site of Adenosine Deaminase"
V.R. Caiolfa, D. Gill and **A.H. Parola**
FEBS Lett., **260**, 19-22 (1990).
27. "Deviation From Homeoviscous Adaptation in Escherichia coli Membranes"
A.H. Parola, M. Ibdah, D. Gill, and A. Zaritsky
Biophys. J., **57**, 621-626 (1990).
28. "Membrane Lipid-Protein Interactions Modify The Regulatory Role of Adenosine-Deaminase Complexing Protein: A Phase Fluorometry Study of a Malignancy Marker"
A.H. Parola, N. Porat, V.R. Caiolfa, D. Gill, L.A. Kiesow, M. Weisman, S. Nemschitz, D. Yaron, K. Singer and E. Solomon
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29. "Chicken Embryo Fibroblasts Exposed to Weak, Time-Varying Magnetic Fields Share Cell Proliferation, Adenosine Deaminase Activity, and Membrane Characteristics of Transformed Cells"
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30. "Proton Transfer and $n\pi^*$ Transition in the Photophysics of 1,N⁶-Ethenoadenosine"
R.A. Agbaria, **A.H. Parola** and D. Gill
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31. "Fluorescence Polarization Assay for Endothelin Converting Enzymes"
S. Hazan, I. Fishov, M. Zamai, V.R. Caiolfa and **A.H. Parola**
Peptides, **16**, 833-836 (1995).
32. "Purinergically Induced Membrane Fluidization in Ciliary Cells: Characterization and Control by Calcium and Membrane Potential"
E. Alfahel, A. Korngreen, **A.H. Parola** and Z. Priel
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33. "Interaction of *Escherichia coli* Tryptophanase with Quasisubstrates and Monovalent Cations Studied by the Circular Dichroism and Fluorescence Methods"
T. Ben-Kasus, A. Markel, G.Y. Gdalevsky, Y.M. Torchinsky, R.S. Phillips and **A.H. Parola**
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34. "Novel Fluorescence-Photochrome Labeling Method for The Study of Biomembrane Dynamics"
G.I. Likhstein, R. Bishara, V. Papper, B. Uzan, I. Fishov, D. Gill and **A.H. Parola**
J. Biochem. Biophys. Methods, **33**, 117-133 (1996).

35. "Antiangiogenic Naphthalene Sulfonic Distamycin-A Derivatives Tightly Interact with Human Basic Fibroblast Growth Factor"
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36. "Interaction of a Novel Fluorescent Analogue of Interferon- γ with Transformed Cells"
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Bioconj. Chem., **8**, 459-465 (1997).
37. "Distamycin-A Derivatives Potentiate Tumor Necrosis Factor Activity via the Modulation of Tyrosine Phosphorylation"
J. P. Zou, I. Nathan, A. Dvilansky, **A.H. Parola**, M. Zamai, and M. Kafka
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38. "Probing the Active Site of Adenosine Deaminase by A Novel Fluorescent Inhibitor"
V.R. Caiolfa, D. Gill and **A.H. Parola**
Biophys. Chem., **70**, 41-56 (1997).
39. "The Effect of Sinusoidally Varying Magnetic Fields on Cell Proliferation and Adenosine Deaminase Specific Activity"
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Bioelectromagnetics, **19**, 46-52 (1998).
40. "The CP-1 Subunit of Adenosine Deaminase Complexing Protein from Calf Kidney is Identical with Human, Mouse and Rabbit DPPIV"
I. Ben-Shooshan and **A.H. Parola**
Comp. Biochem. Physiol., **119B**, 289-292 (1998).
41. "Alterations in Membrane Lipid Dynamics of Leukemic Cells Undergoing Growth Arrest and Differentiation: Dependency on the Inducing Agent"
I. Nathan, I. Ben-Valid, R. Henzel, H. Masalha, S.C. Nemschitz, A. Dvilansky and **A.H. Parola**.
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42. "Cold inactivation and dissociation into dimers of *Escherichia coli* tryptophanase and its W330F mutant form"
T. Erez, G.Y. Gdalevsky, Y.M. Torchinsky, R.S. Phillips and **A.H. Parola**
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43. "Nature of Interaction Between Basic Fibroblast Growth Factor and the Antiangiogenic Drug PNU145156E (7,7-(Carbonyl-bis[imino-N-Methyl-4,2-pyrrolicarbonylimino[N-methyl-4,2-pyrrole]-carbonylimino])-bis-(1,3-naphthalene disulfonate))"
M. Zamai, V.R. Caiolfa, D. Pines, E. Pines and **A.H. Parola**
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44. "Pyridoxal Phosphate Binding to Wild Type, W330F and C298S Mutants of *E. coli* Apotryptophanase: Unraveling the Cold Inactivation"
T. Erez, R.S. Phillips and **A.H. Parola**
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45. "Enhanced Proliferation Caused by Low Frequency Weak Magnetic Fields in Chick Embryo Fibroblasts is Suppressed by Radical Scavengers"
G. Katsir and **A.H. Parola**
Biochem. Biophys. Res. Commun., **252**, 753-756 (1998).
46. "Transcription- and Translation-Dependent Changes of Membrane Dynamics in Bacteria: Testing the Transertion Model for Domain Formation"
Z. Binenbaum, **A.H. Parola**, A. Zaritzky and I. Fishov
Molec. Microbiol., **32**, 1173-1182 (1999).
47. "The Regulatory Role of Adenosine Deaminase Complexing Protein (Dipeptidyl Peptidase IV = CD26) on the Malignancy Marker Adenosine Deaminase: Effect of Membrane Cholesterol and Phase-Transition"
A.H. Parola, V.R. Caiolfa, I. Ben-Shooshan and R. Cohen-Luria
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48. "Cold induced enzyme inactivation: how does cooling lead to pyridoxal phosphate-aldimine bond cleavage in tryptophanase?"
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49. "On the Regulatory Role of Dipeptidyl Peptidase IV (= CD26 = Adenosine Deaminase Complexing Protein) on Adenosine Deaminase activity"
I. Ben-Shooshan, A. Kessel, N. Ben-Tal, R. Cohen-Luria and **A.H. Parola**
Biochim. Biophys. Acta, **1587**, 21-30 (2002).
50. "Nature of interaction between basic fibroblast growth factor and the antiangiogenic drug 7,7-(carbonyl-bis[imino-N-methyl-4,2-pyrrolicarbonylimino[N-methyl-4,2-pyrrolicarbonylimino])-bis-(1,3-naphthalene disulfonate): 2. Removal of polar interactions affects protein folding"
M. Zamai, C. Hariharan, D. Pines, M. Safran, A. Yayon, V.R. Caiolfa, R. Cohen-Luria, E. Pines and **A.H. Parola**
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51. "Coexistence of Domains with Distinct Order and Polarity in Bacterial Membrane is Revealed by Laurdane Fluorescence"
S. Vanounou, D. Pines, E. Pines, **A.H. Parola** and I. Fishov
Photochem. Photobiol. **76**, 1-11 (2002).
52. "Low Frequency Electromagnetic Fields Induce a Stress Effect upon Higher Plants, as Evident by the Universal Stress Signal, Alanine"
Monselise E. B-I, **Parola A.H.** and Kost, D.
Biochem. Biophys. Res. Commun., **302**, 427-434,(2003).
53. "Intrinsic Fluorescence Polarization of Amniotic Fluid and the Evaluation of Human Fetal Lung Maturity"
J. Molcho, H. Avraham, R. Cohen-Luria and **A.H. Parola**.
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54. "Phosphatidylethanolamine and phosphatidylglycerol are segregated into different domains in bacterial membrane. A study with pyrene-labeled phospholipids"

S. Hazan, **A.H. Parola** and I. Fishov

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55. "Intrinsic fluorescence polarization of the amniotic fluid for fetal maturity assessment"

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56. "Crystallization and preliminary X-ray analysis of the apo form of *Escherichia coli* tryptophanase"

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57. "Radical scavengers suppress low frequency EMF enhanced proliferation in cultured cells and stress effects in higher plants"

Abraham H. Parola, Daniel Kost, Gila Katsir, Edna Ben-Izhak Monselise and Rivka Cohen-Luria

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58. "Membrane-catalyzed nucleotide exchange on DnaA: Effect of surface molecular crowding"

Alexander Aranovich, Garik Y. Gdalevsky, Rivka Cohen-Luria, Itzhak Fishov, and **Abraham H. Parola**

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59. "Interaction between Basic Fibroblast Growth Factor and the Anti-angiogenic Drug PNU145156E"

Moreno Zamai, Chithra Hariharan, Dina Pines, Michal Safran, Avner Yayon, Valeria R. Caiolfa, Ehud Pines, Rivka Cohen-Luria, and **Abraham H. Parola**

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60. "Intrinsic Fluorescence Polarization of Amniotic Fluid: II. Towards a Non-Invasive Method for the Determination of Fetal Lung Maturity".

Hemy Avraham, Eric Ohana, Eli Maymon, Rivka Cohen-Luria, Jonathan Molcho and

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61. "The Crystal Structure of Apo Tryptophanase from *Escherichia Coli* Reveals a wide open Conformation".

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62. "The Reactivation of DnaA (L366K) Requires Less Acidic Phospholipids Supporting Their Role in the Initiation of Chromosome Replication in *E. coli*".

Alexander Aranovich, **Abraham H. Parola**, and Itzhak Fishov.

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63. "Structural Insight into Cold Inactivation of Tryptophanase and Cold Adaptation of subtilisin S41".
Orna Almog, Anna Kogen, Marina de Leeuw, Garik Gadlevsky Rivka Cohen-Luria, and **Abraham H. Parola**.
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64. "New Tryptophanase Inhibitors: Towards Prevention of Bacterial Biofilm Formation".Roni Scherzer, Garik Y. Gdalevsky, Yehuda Goldgur, Rivka Cohen-Luria, Shmuel Bittner, Abraham H. Parola. *Journal of Enzyme Inhibition & Medicinal Chemistry*. 24, 350-355, (2009)
65. "Regulatory Role of Adenosine Deaminase Complexing Protein (Dipeptidyl Peptidase IV = CD26) on the Malignancy Marker Adenosine Deaminase: Effect of Membrane Cholesterol and Phase-Transition".
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66. "Conformational Changes and Loose Packing Promote *E. coli* Tryptophanase Cold Lability".
Anna" Kogan, Garik Y. Gdalevsky, Rivka Cohen-Luria, Yehuda Goldgur, Robert S. Phillips, **Abraham H. Parola***,and Orna Almog*.
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67. "Towards instantaneous quantitative fluoroimaging drugs determination in body fluids with no added reagents"
Natalia V. Strashnikova, Arcady P. Gershanik, Nona Papiashvili, Daniel Khankin' Rivka Cohen-Luria, Shlomo Mark, Yehoshua Kalisky, and **Abraham H. Parola***, in "Spectroscopy -- Biomedical Applications" **24**, 317-324 (2010)
68. "Bax Δ C Induced Increased Membrane Lipid Order in Isolated Rat Liver Mitochondria"
Natalia Tsesin, Elai Davicioni, Rivka Cohen-Luria, Ilana Nathan and **Abraham H. Parola**,
WSEAS Transaction on Biology and Medicine, **7**, 263-276 (2010)
69. "TPCK activates autophagic cell death in MCF-7 cells is associated with indirect down-regulation of intracellular proteases".
Michal Glickman, Zbigniew Darzynkiewicz, Abraham H. Parola* and Ilana Nathan*, submitted.
70. "Protective Effect of Humanin and Its Derivatives against Necrotic Cell Death
Aviv Cohen, Jenny Lerner-Yardeni, Roni Kasher*, Avraham H. Parola*, Ilana Nathan,*
submitted
71. "The interaction of serine protease inhibitors with IFN- γ enhances Fas mediated apoptosis through upregulation of FasR; a novel therapeutic strategy against cancer.
Natalia Shadrin, Michal Glickman, **Abraham H. Parola*** and Ilana Nathan, to be Submitted.
72. "Membrane Occupancy-Dependent Rejuvenation of DnaA is Associated with its conformationally driven oligomerization"

Alexander Aranovich, Shani Braier, Esti Ansbacher Hanna Rapoport, Rony Granek, **Abraham H. Parola*** and Itzhak Fishov, to be submitted.

73. "Does Cardiolipin play a role in KCN-induced Necrosis?"

Natalia Tsesin, Udi Zelig, Shaul Mordechai, Ilana Nathan and **Abraham H. Parola***, to be submitted.

Articles in preparation

1. "Structure Determination of the Fluorophore in Amniotic Fluid whose Fluorescence Polarization indicate Fetal Lung Maturity"

L. Ladizhensky, G. Y. Gdalevsky, J. Molcho E. Maymon, R. Cohen-Luria, **A. H. Parola.**

2. "Extacellular ATP Induced Membrane Fluidization in Ciliary Cells: II. Possible Involvement of PKC, cAMP and the Cytoskeleton"

E. Alfahel, A. Korngreen, **A.H. Parola** and Z. Priel.

3. "On the Regulatory Role of Dipeptidyl Peptidase IV (= CD26 = Adenosine Deaminase Complexing Protein) on Adenosine Deaminase activity in Normal and Transformed Chick Embryo Fibroblasts"

Y. Roth, N. Porat, Y. Sharoni, R. Cohen-Luria and **A.H. Parola.**

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