

1. Personal Details:

Date of birth: 29/08/1971
Phone: +972-2-6585746 (office), +972-54-8820285 (mobile)
Email: assaf.friedler@mail.huji.ac.il
Website: <https://friedlerlab.huji.ac.il/>

**2. Education:**

1992-1994: B.Sc., the Hebrew University of Jerusalem, Chemistry and the "Amirim" program for excellent students. Final grade 96.61 (out of 100), *Summa Cum laude*
1994-2000: Ph.D studies, Dept. of Organic Chemistry, The Hebrew University of Jerusalem, Chemistry. Awarded PhD degree 6/2000, with distinction.
2000-2004: Post-doctoral research fellow at the Medical Research Council Centre for Protein Engineering, Cambridge, UK. Host: Prof. Sir Alan Fersht.

3. Appointments and academic ranks at the Hebrew University:

2004 - 2009: Senior lecturer, Institute of Chemistry
2005 - 2009: Head of the undergraduate chemistry-biology program, The Hebrew University
2009 - 2015: Associate Professor with tenure, Institute of Chemistry
2010 - 2015: Head of the School of Chemistry, the Hebrew University of Jerusalem.
Since 2015: Full Professor at the Institute of Chemistry
Since 2015: Chairman, central student admission committee, the Hebrew University.
2016 - 2020: Vice Rector, the Hebrew University of Jerusalem; in charge of various topics, among them: student admission, special teaching programs for Arab and Haredi populations and more.
From October 2019: Chairman of the Hebrew University for the youth (formerly the authority for community and youth of the Hebrew university).
From October 2020: Dean, Faculty of Science, The Hebrew University of Jerusalem

4. Prizes and awards:

1999: Marie Curie post-doctoral fellowship from the EU (declined 7/00 when switched to the Human Frontier fellowship)
2000: Post-doctoral fellowship in the UK, in frame of the program for exchange of scientists between Israel and the UK, The Israeli Academy of Sciences and the British Royal Society
2000: Long-term post-doctoral fellowship by the Human Frontier Science Program Organization
2004: Alon fellowship for young scientists, awarded by the Israeli council for higher education
2004: Career development award by the Human Frontier Science Program Organization
2006: Excellence award from the Israel Cancer Association
2007: ERC starting grant from the EU (awarded to ~300 out of 9167 applicants)
2009: Israeli Chemical Society Excellent Young Scientist Prize. Awarded the prize for "For his ground-breaking studies on protein-protein interactions and for the development of molecules with therapeutic potential based on improved understanding of such interactions"
2010 IUPAC young chemist award
2012 Featured in a special issue of *Med Chem Comm* about "new talents" in medicinal chemistry
2013 Rector prize for excellent researcher and lecturer at the Hebrew University of Jerusalem
2014 Featured in a special issue of *Chem Comm* about emerging young scientists
2015 Sir Zelman Cowen Universities Fund Prize for discovery in medical research, awarded for "increasing our understanding of protein interactions and how this can be applied to improving drug design"
2018 The Michael Milken Prize for Excellence in Teaching

- Outstanding teacher for teaching the course "organic chemistry for biology students" in 2005-2006, 2008-2009, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-

2016, 2016-2017, 2017-2018, 2018-2019 and 2021-2022.

5. Additional Academic and Public Activities:

- 2010: Guest lecturer, taught a one-week course about protein chemistry in Lublin University, Poland
- 2012-2018: Member of the council of the European Peptide Society
- 2013: Guest lecturer, taught a one-week course about protein chemistry in Utrecht University, the Netherlands.
- 2014-2017: Secretary, physical and biophysical division (division 1) of IUPAC (International Union for Pure and Applied Chemistry)
- 2015-2018: Member of the executive committee, Israeli Chemical Society
- 2017: Visiting Professor ("Donders" Professorship), Utrecht University, the Netherlands
- 2014-2020: New York University (NYU), Tel Aviv site, Israel: teaching Organic Chemistry II
- Since 2015: Member, chemistry teaching committee, Israel Ministry of education
- 2015-2020: Member, the Inter-University forum for student admission policy, Israel
- 2016-2020: Member, board of directors, National Institute for Testing and Evaluation, Israel
- 2017-2020: Member, Standing committee, National Institute for Testing and Evaluation, Israel
- 2017-2020: Chairman, the Inter-University forum for student admission policy, Israel

6. Student supervision:

Supervised so far: 20 M.Sc. students, 20 Ph.D students, 10 post-docs, dozens of undergraduate students.

7. Research Interests:

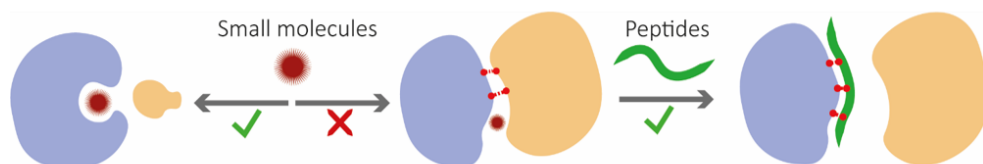
Fields of expertise:

Chemical biology, peptide and protein chemistry, protein interactions, intrinsically disordered proteins, biophysical chemistry, medicinal chemistry and drug design.

Research Summary:

Protein-Protein Interactions (PPI) mediate most of the vital processes in cells and are involved in numerous diseases. However, it is extremely challenging to make PPI drug targets. This becomes even more difficult when the interactions involve disordered protein domains.

The research in our lab focuses on using peptides for the quantitative biophysical and structural analysis of PPI in health and disease. Based on this, we develop lead peptides that modulate PPI for therapeutic purposes. We are looking at PPI in biological systems that are affected in disease, such as cancer-related pathways.

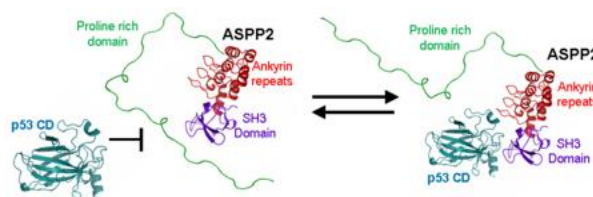


Our research strategy is:

1. Studying the molecular mechanisms of protein-protein interactions in health, to understand how the particular biological system works at the molecular level
2. Understanding what goes wrong at the molecular level in disease
3. Developing peptide-based drugs that target protein-protein interactions to restore the biological system to its healthy conditions

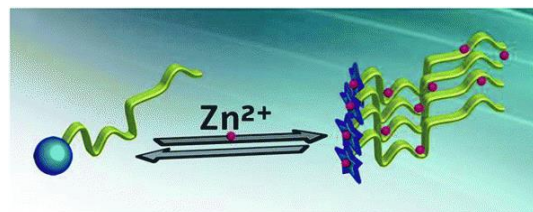
We are using an interdisciplinary approach combining:

1. Peptide chemistry: developing new methods for the synthesis of peptides and modified peptides
2. Protein biochemistry: new methods for protein expression and purification
3. Biophysical and biochemical studies of structure, interactions and activity of peptides and proteins

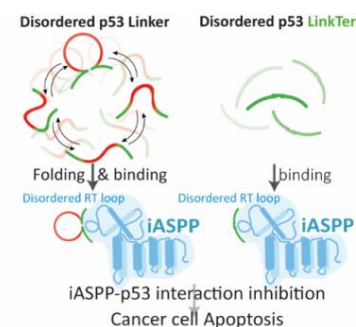


Some of our specific research Topics are:

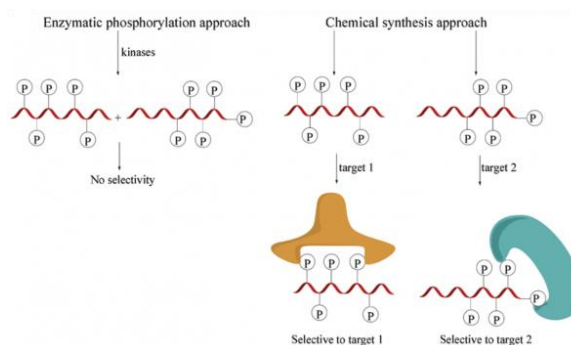
1. Interactions of apoptosis-related proteins as a basis for drug design ([Katz C. et al., J. Biol. Chem., 2012](#); [Rotem-Bamberger S. et al., PLoS ONE, 2013](#); [Reingewertz T. H. et al., Biochemistry, 2015](#); [Iosub-Amir A. et al., Sci. Rep., 2015](#); [Iosub-Amir A. et al., Chem Sci., 2019](#); [Mayer G. et al., Chem. Eur. J., 2020](#))



2. Intrinsically disordered proteins: the interplay between structured and disordered domains in proteins ([Amartely H. et al., ChemComm, 2013](#); [Faust O. et al., Chem. Comm., 2014](#); [Reingewertz T. H. et al., Biochemistry, 2015](#); [Amartely H. et al., Chem. Sci., 2016](#); [Faust O. et al., Chembiochem, 2018](#))



3. Intrinsically disordered proteins as drug targets ([Mayer G. et al., Chem. Eur. J., 2020](#);)

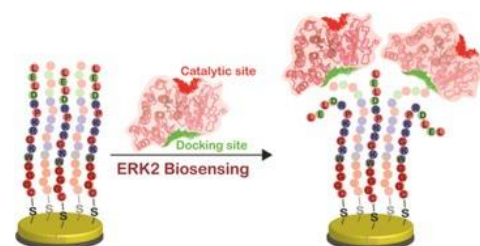


4. Developing new synthetic methods for efficient synthesis of modified peptides such as cyclic peptides ([Hayouka Z. et al., J Biol. Chem., 2012](#); [Chandra K. et al., Angew. Chem. Int. Ed., 2014](#); [Chandra K. et al., Org. Biomol. Chem., 2014](#); [Chandra K. et al., ChemMedChem, 2016](#); [Mamidi S. et al., Front. Chem., 2020](#)) and multiphosphorylated peptides ([Mamidi S. et al., Org. Biomol. Chem., 2019](#); [Grunhaus D. et al., Eur. J. Org. Chem., 2021](#))

5. Developing PPI-based biosensors ([Amit E. et al., Chem. Sci., 2015](#); [Solomon O. et al., Chem. Eur. J., 2022](#); [Joshi P. N. et al., Biosens. Bioelectron., 2022](#))

List of publications:

1. Broder Y.C. , Stanhill A. , Zakai N. , **Friedler A.** , Gilon C . and Loyter A . (1997) Translocation of NLS-BSA conjugates into nuclei of permeabilized cells can be supported by protoplast extract: An experimental system for studying plant cytosolic factors involved in nuclear import , FEBS Lett 412, 535-539;
2. Baraz L. , **Friedler A.** , Blumenzweig E. , Nussinov O. , Chen N. , Steinitz M. , Gilon C . and Kotler M . (1998) HIV-1 Vif derived peptides inhibit the viral protease and arrest virus production, FEBS Lett. 441(3) 419-426
3. Karni O. , **Friedler A.** , Zakai N. , Gilon C . and Loyter A . (1998) A peptide derived from the N-terminal region of HIV-1 Vpr promotes nuclear import in permeabilized cells: Elucidation of the NLS region of the Vpr, FEBS lett. 429, 421-425
4. **Friedler A.** , Zakai N. , Karni O. , Broder Y.C. , Baraz L. , Kotler M. , Loyter A . and Gilon C . (1998) Backbone cyclic peptide, which mimics the nuclear localization signal of HIV-1 matrix protein, inhibits nuclear import and virus production in non-dividing cells, Biochemistry 37(16), 5616-5622
5. **Friedler A.** , Zakai N. , Karni O. , Friedler D. , Gilon C . and Loyter A . (1999) Identification of a Nuclear transport inhibitory signal (NTIS) in the basic domain of HIV-1 Vif protein, J. Mol. Biol 289, 431-437
6. **Friedler A.** , Blumenzweig I. , Baraz L. , Steinitz M. , Kotler M. and Gilon C. (1999) Peptides derived from HIV-1 Vif : A non substrate based novel type of HIV-1 protease inhibitors, J Mol Biol, 287, 93-101
7. **Friedler A.** , Friedler D. , Luedtke N. , Tor Y. , Loyter A. and Gilon C. (2000) development of a functional Backbone Cyclic mimetic of The HIV-1 Tat Arginine Rich Motif, J Biol Chem, 275 (31), 23783-23789
8. Schymkowitz J.W.H. , Rousseau F. , Wilkinson H.R. , **Friedler A.** and Itzhaki L.S. (2001): Observation of signal transduction in three-dimensional domain swapping, Nature struct. biol. 8, 888-892
9. Baraz L. , Hutoran M. , Blumenzweig I. , Katzenellenbogen M. , **Friedler A.** , Gilon C. , Steinitz M. and Kotler M. (2002) Human immunodeficiency virus type 1 Vif binds the viral protease by interaction with its N-terminal region, J Gen Virol 83: 2225-2230
10. Blumenzweig I. , Baraz L. , **Friedler A.** , Danielson U.H. , Gilon C. , Steinitz M. and Kotler M. (2002) HIV-1 Vif-derived peptides inhibit drug-resistant HIV proteases, Biochem Biophys Res Commun 292, 832-840
11. Hariton-Gazal E. , Friedler D. , **Friedler A.** , Zakai N. , Gilon C. and Loyter A. (2002) Inhibition of nuclear import by backbone cyclic peptidomimetics derived from the HIV-1 MA NLS sequence, Biochim Biophys Acta 1594(2), 234-42
12. **Friedler A.** , Hansson L.O. , Veprintsev D.B. , Freund S.M.V. , Rippin T.M. , Nikolova P.V. , Proctor M.R. , Rüdiger S. and Fersht A.R. (2002) A peptide that binds and stabilises p53 core domain: chaperone strategy for rescue of oncogenic mutants, Proc. Natl. Acad. Sci. USA 99, 937-942
13. Hansson L.O. , **Friedler A.** , Freund S. , Rudiger S. and Fersht A.R. (2002) Two sequence motifs from HIF-1a bind to the DNA binding site of p53, Proc. Natl. Acad. Sci. USA 99, 10305-10309
14. Schon O. , **Friedler A.** , Bycroft M. , Freund S.M.V. and Fersht A.R. (2002) Molecular Mechanism of the Interaction between MDM2 and p53, J Mol Biol, 323, 491-501
15. Allen M. , **Friedler A.** , Schon O. and Bycroft M. (2002) The structure of an FF domain from human HYPA/FBP11, J Mol Biol, 323, 411-416



16. Seeliger M.A. , Breward S.E. , **Friedler A.** , Schon O. and Itzhaki L.S. (2003) Quantification of the interaction network of the Cks1 complex adapter protein, Nature Struct. Biol., 10, 718-724
17. Issaeva N., **Friedler A.**, Bozko P. , Wiman K.G. , Fersht A.R. and Selivanova G. (2003) Rescue of mutants of the tumour suppressor p53 in cancer cells by a designed peptide , Proc. Natl. Acad. Sci. USA, 100, 13303-7
18. **Friedler A.** , Veprintsev D.B. , Hansson L.O. and Fersht A.R. (2003) Kinetic instability of p53 core domain mutants: implications for rescue by small molecules, J. Biol. Chem, 278, 24108 - 24112.
19. Schon O , **Friedler A.** , Freund S.M.V. , Bycroft M. and Fersht A.R. (2004) Binding of p53-derived ligands to MDM2 induces a variety of long range conformational changes, J. Mol. Biol. 336, 197-202
20. Ekblad C.M.S. , **Friedler A.** , Veprintsev D. , Weinberg R. & Itzhaki L.S. (2004) Comparison of BRCT domains of BRCA1 and 53BP1: A biophysical analysis, Protein Sci. 13(3), 617-25
21. **Friedler A.**, DeDecker B.S., Freund S.M.V., Blair C., Rüdiger S. and Fersht A.R. (2004) Structural destabilisation of p53 by the R249S mutation, and its rescue by a designed peptide: implications for the "mutant conformation" , J. Mol. Biol. 336, 187-196
22. **Friedler A.** , Veprintsev DB , Freund SMV , von Glos KI and Fersht AR (2005) Modulation of binding of DNA to the C-terminal domain of p53 by acetylation. Structure, 13(4):629-36
23. **Friedler A.** , Veprintsev DB , Rutherford T , von Glos KI and Fersht AR. (2005) Binding of Rad51 and other peptide sequences to a promiscuous, highly electrostatic, binding site in p53. J Biol Chem, 280: 8051-8059.
24. Diamant S. , Podoly E. , **Friedler A.** , Ligumsky, H. , Livnah O. and Soreq H. (2006) Butyrylcholinesterase attenuates amyloid fibril formation in vitro. Proc Natl Acad Sci USA. 103(23):8628-33
25. Hayouka Z , Rosenbluh J , Levin A , Loya S , Lebendiker M , Veprintsev DB , Kotler M , Hizi A , Loyter A and **Friedler A** (2007) Inhibiting HIV-1 integrase by shifting its oligomerization equilibrium; Proc Natl Acad Sci USA, 104(20):8316-21
26. Rosenbluh J, Hayouka Z, Loya S, Levin A, Armon-Omer A , Britan L , Hizi A , Kotler M , **Friedler A** and Loyter A (2007) Interaction between the HIV-1 Rev and IN proteins: a base for the development of anti-HIV peptides, J Biol Chem, 282(21):15743-53
27. Rotem S. , Katz C. and **Friedler A.** (2007): Insights into the structure and protein-protein interactions of the pro-apoptotic protein ASPP2; Biochem. Soc. Transac., 35(5), 966-69
28. Karni-Schmidt O. , **Friedler A.** , Zupnick A. , McKinney K. , Mattia M. , Beckerman R. , Bouvet P., Sheetz M., Fersht A. and Prives C. (2007): Energy dependent nucleolar localization of p53 *in vitro* requires two discrete regions within the p53 carboxyl terminus; Oncogene, 26(26):3878-91
29. Kirshenboim N. , Hayouka Z. , **Friedler A.** and Hizi A. (2007) Expression and Characterization of a Novel Reverse Transcriptase of the LTR Retrotransposon Tf1; Virology, 366(2):263-76
30. Coster G. , Hayouka Z. , Argaman L. , Strauss C. , Friedler A. , Brandeis M. and Goldberg M. (2007) The DNA damage response mediator MDC1 directly interacts with the anaphase promoting complex/cyclosome, J Biol Chem, 282(44):32053-64
31. Qvit N. , Reuveni H. , Gazal S. , Peretzman-Shemer A. , Blum G. , Niv M. , Feldstein A. , Meushar S. , Shalev DE. , **Friedler A.** and Gilon C. (2008) A Novel MacroCyclic Disulfide Library: The IGF-1R Model; J Comb. Chem., 10(2):256-66
32. Armon-Omer A. , Levin A. , Hayouka Z. , Butz K. , Hoppe-Seyler F. , Loya S. , Hizi A. , **Friedler A.** and Loyter A. (2008) Correlation between shiftide activity and HIV-1 integrase inhibition by a peptide selected from a combinatorial library; J Mol Biol, 376 (4), 971-982
33. Gabizon R. , Mor M. , Rosenberg M. , Britan L. , Hayouka Z. , Kotler M. , Shalev D.E. and **Friedler A.** (2008) Using Peptides to Study the Interaction between the p53 Tetramerization Domain and HIV-1 Tat; Biopolymers (Peptide Science), 90(2):105-16
34. Hayouka Z. , Rosenbluh, J , Levin A. , Maes M. , Loyter A. and Friedler A. (2008) Peptides derived from HIV-1 Rev inhibit HIV-1 Integrase in a shiftide mechanism; Biopolymers (Peptide Science), 90(4):481-487
35. Rotem S. , Katz C. , Benyamini H. , Lebendiker M. , Veprintsev D. , Rudiger S. , Danieli T. , and **Friedler A.** (2008): Structure and interactions of the proline-rich domain of ASPP2; J Biol Chem 283(27):18990-9
36. Katz C. , Benyamini H. , Rotem S. , Lebendiker M. , Danieli T. , Dines, M. , Bronner, V. , Bravman, T. , Rudiger S. and **Friedler A.** (2008): Molecular Basis of the Interaction Between the Anti-

- Apoptotic Bcl-2 Family Proteins and the Pro-Apoptotic Protein ASPP2; *Proc. Natl. Acad. Sci. USA*, 105(34):12277-82
37. Qvit N. , Hatzubai A. , Shalev D.E. , **Friedler A.** , Ben-Neriah Y. and Gilon C. , (2009) Design and Synthesis of Backbone Cyclic Phosphorylated Peptides: The I κ B Model; *Biopolymers*, 91(2):157-68
 38. Levin A. , Hayouka Z. , Brack-Werner R. , **Friedler A.** and Loyter A. (2009) Peptides Derived from HIV-1 Integrase that Bind Rev Stimulate Viral Genome Integration; *PLoS One*, 4(1):e4155
 39. Reingewertz T. , Benyamini H., Lebendiker M. , Shalev D.E. and **Friedler A.** (2009) The C-Terminal Domain of the HIV-1 Vif Protein is Natively Unfolded in its unbound state; *Protein Engineering Design and Selection*, 22(5):281-7
 40. Benyamini H, Leonov H, Rotem S, Katz C, Arkin IT, **Friedler A.** (2009) A model for the interaction between NF-kappa-B and ASPP2 suggests an I-kappa-B-like binding mechanism; *Proteins: Structure, Function and Bioinformatics*, 77(3):602-611
 41. Maes M, Levin A., Hayouka Z., Shalev DE, Loyter A. and **Friedler A.** (2009) Peptide inhibitors of HIV-1 integrase: From mechanistic studies to improved lead compounds; *Bioorg. Med. Chem.*, 17(22):7635-42
 42. Levin A, Hayouka Z, Brack-Werner R, Volsky DJ, **Friedler A** and Loyter A (2009) Novel regulation of HIV-1 replication and pathogenicity: Rev inhibition of integration; *Protein Engineering Design and Selection*, 22(12):753-63
 43. Levin A, Rosenbluh S, Hayouka Z, **Friedler A** and Loyter A (2010) Integration of HIV-1 DNA is regulated by interplay between viral Rev and cellular LEDGF/p75 proteins; *Molecular Medicine*, 16(1-2):34-44
 44. Ronen D , Rosenberg MM, Shalev DE, Rosenberg M, Rotem S, Friedler A and Ravid S (2009) The Positively Charged Region of the Myosin IIC Non-Helical Tailpiece Promotes Filament Assembly; *J Biol Chem*, 285(10):7079-86
 45. Hayouka Z, Levin A, Maes M, Hadas E, Shalev DE, Volsky DJ, Loyter A, **Friedler A.** (2010) Mechanism of action of the HIV-1 integrase inhibitory peptide LEDGF 361-370. *Biochem Biophys Res Commun.* , 2;394(2):260-5
 46. Levin A, Hayouka Z, **Friedler A**, Loyter A. (2010) Over-expression of the HIV-1 Rev promotes death of nondividing eukaryotic cells. *Virus Genes*, 40(3):341-6
 47. Levin A, Hayouka Z, **Friedler A**, Brack-Werner R, Volsky DJ, Loyter A. (2010) A novel role for the viral Rev protein in promoting resistance to Super-infection by Human Immunodeficiency Virus type 1. *J Gen Virol.* , 91(Pt 6):1503-13
 48. Reingewertz TH, Shalev DE, **Friedler A.** (2010) Structural Disorder in the HIV-1 Vif Protein and Interaction-Dependent Gain of Structure.; *Protein Pept Lett.* 17(8):988-98
 49. Garty S, Kimelman-Bleich N, Hayouka Z, Cohn D, **Friedler A**, Pelled G, Gazit D. (2010) Peptide-Modified "Smart" Hydrogels and Genetically Engineered Stem Cells for Skeletal Tissue Engineering.; *Biomacromolecules*, 11(6):1516-26
 50. Levin A, Hayouka Z, **Friedler A**, Loyter A. (2010) Nucleocytoplasmic shuttling of HIV-1 integrase is controlled by the viral Rev protein; *Nucleus* 1 (2), 1-12
 51. Levin A, Hayouka Z, Helfer M, Brack-Werner R, **Friedler A**, Loyter A. (2010) Stimulation of the HIV-1 integrase enzymatic activity and cDNA integration by a peptide derived from the integrase protein.; *Biopolymers*. 93(8):740-51
 52. Benyamini H and **Friedler A.** (2010) Using Peptide to Study Protein – Protein Interactions; *Future medicinal Chemistry* 2(6), 989–1003
 53. Canello T, Frid K, Gabizon R, Lisa S, **Friedler A**, Moskovitz J, Gasset M, Gabizon R. (2010) Oxidation of Helix-3 methionines precedes the formation of PK resistant PrP. *PLoS Pathog.* Jul 1;6(7):e1000977
 54. Poyurovsky MV, Katz C, Laptenko O, Beckerman R, Lokshin M, Ahn J, Byeon II, Gabizon R, Mattia M, Zupnick A, Brown LM, **Friedler A**, Prives C. (2010) The C terminus of p53 binds the N-terminal domain of MDM2. *Nat Struct Mol Biol*;17(8):982-9
 55. Levin A, Hayouka Z, **Friedler A**, Loyter A. (2010) Peptides derived from the HIV-1 integrase promote HIV-1 infection and multi-integration of viral cDNA in LEDGF/p75-knockdown cells. *Virol J.* 7:177
 56. Levin A, Hayouka Z, **Friedler A**, Loyter A. (2010) Specific eradication of HIV-1 from infected cultured cells. *AIDS Res Ther.*;7:31
 57. Levy-Beladev L, Levdansky L, Gaberman E, **Friedler A**, Gorodetsky R. (2010) A family of cell-adhering peptides homologous to fibrinogen C-termini. *Biochem Biophys Res Commun.* 401(1):124-30

58. Hayouka Z, Hurevich M, Levin A, Benyamini H, Iosub A, Maes M, Shalev DE, Loyter A, Gilon C, **Friedler A.** (2010) Cyclic peptide inhibitors of HIV-1 integrase derived from the LEDGF/p75 protein. *Bioorg Med Chem.* 18(23):8388-95
59. **Friedler A.** (2011) From peptides to proteins: lessons from my years at the Centre for Protein Engineering. *Protein Eng Des Sel.* 24(1-2):241-5.
60. Noutsou M, Duarte AM, Anvarian Z, Didenko T, Minde DP, Kuper I, de Ridder I, Oikonomou C, **Friedler A**, Boelens R, Rüdiger SG, Maurice MM. (2011) Critical scaffolding regions of the tumor suppressor axin1 are natively unfolded. *J Mol Biol.* 405(3):773-86
61. Benyamini H and **Friedler A.** (2011) The ASPP interaction network: electrostatic differentiation between pro- and anti-apoptotic proteins; *J Mol Recognition*, 24(2):266-74
62. Levin A, Benyamini H, Hayouka Z, **Friedler A**, Loyter A. (2011) Peptides that bind the HIV-1 integrase and modulate its enzymatic activity - kinetic studies and mode of action. *FEBS J.* 278(2):316-30.
63. Katz C, Levy-Beladev L, Rotem-Bamberger S, Rito T, Rüdiger SG, **Friedler A.** (2011) Studying protein-protein interactions using peptide arrays. *Chem Soc Rev.* 40(5):2131-45
64. Sukenik S, Politi R, Ziserman L, Danino D, **Friedler A**, Harries D. (2011) Crowding alone cannot account for cosolute effect on amyloid aggregation. *PLoS One.* Jan 10;6(1):e15608.
65. Flashner E, Raviv U, **Friedler A.** (2011) The effect of tachykinin neuropeptides on amyloid β aggregation. *Biochem Biophys Res Commun.* 407(1):13-7.
66. Siman P, Blatt O, Moyal T, Danieli T, Lebendiker M, Lashuel HA, **Friedler A**, Brik A. (2011) Chemical Synthesis and Expression of the HIV-1 Rev Protein. *Chembiochem.* 12(7):1097-104.
67. Reingewertz TH, Shalev DE, Sukenik S, Blatt O, Rotem-Bamberger S, Lebendiker M, Larisch S, **Friedler A.** (2011) Mechanism of the Interaction between the Intrinsically Disordered C-Terminus of the Pro-Apoptotic ARTS Protein and the Bir3 Domain of XIAP. *PLoS One.* 6(9):e24655. Epub 2011 Sep 20
68. Furth N, Gertman O, Shiber A, Alfassy OS, Cohen I, Rosenberg M, Kleinberger-Doron N, **Friedler A**, Ravid T. (2011) Exposure of Bipartite Hydrophobic Signal Triggers Nuclear Quality Control of Ndc10 at the Endoplasmic Reticulum/Nuclear Envelope. *Mol Biol Cell.* 22(24):4726-39
69. Benyamini H., Loyter A. and **Friedler A.** (2011) A structural model of the HIV-1 Rev-integrase complex: the molecular basis of integrase regulation by Rev; *Biochem Biophys Res Comm*, 416(3-4):252-7
70. Edison N, Reingewertz TH, Gottfried Y, Lev T, Zuri D, Maniv I, Carp MJ, Shalev G, **Friedler A**, Larisch S. (2012) Peptides mimicking the unique ARTS-XIAP binding site promote apoptotic cell death in cultured cancer cells; *Clin Cancer Res.* ; 18(9):2569-78
71. Katz C, Zaltsman-Amir Y, Mostizky Y, Kollet N, Gross A, **Friedler A.** (2012) Molecular basis of the interaction between the pro apoptotic tBID protein and mitochondrial carrier homologue 2 (MTCH2): Key players in the mitochondrial death pathway.; *J Biol Chem.*, 287(18):15016-23
72. Hayouka Z., Levin A., Hurevich M., Shalev DE, Loyter A., Gilon C. and **Friedler A.** (2012) A Comparative Study of Backbone versus Side Chain Peptide Cyclization: Application for HIV-1 Integrase Inhibitors; *Bioorg Med Chem*, 20(10):3317-22
73. Gabizon R, Brandt T, Sukenik S, Lahav N, Lebendiker M, Shalev DE, Veprintsev D, **Friedler A.** (2012) Specific Recognition of p53 Tetramers by Peptides Derived from p53 Interacting Proteins.; *PLoS One.* 2012;7(5):e38060.
74. Maes M, Loyter A, **Friedler A.** (2012) Peptides that inhibit HIV-1 integrase by blocking its protein-protein interactions; *FEBS J.* 279(16):2795-809
75. Maes M, Rimon A, Kozachkov-Magrisso L, Friedler A, Padan E.(2012) Revealing the Ligand Binding Site of NhaA Na⁺/H⁺ Antiporter and its pH Dependence; *J Biol Chem.*,287(45):38150-7.
76. Gabizon R, Faust O, Benyamini H, Nir S, Loyter A and **Friedler A** (2012) Structure activity relationship studies using peptide arrays: the example of the HIV-1 Rev - Integrase interaction; *Med Chem Comm*, 4, 252-259
77. Guy S., Rotem D., Hayouka Z., Gabizon R., Zemel L., Levin A., Loyter A., Porath D. and **Friedler A.** (2013) Monitoring the HIV-1 Integrase Enzymatic Activity Using Atomic Force Microscope in a 2LTR system, *Chem Comm*, 49(30):3113-5.
78. Rotem-Bamberger S., Katz C. and **Friedler A.** (2013) Regulation of ASPP2 interaction with p53 core domain by an intramolecular autoinhibitory mechanism, *PLoS One*, 8(3):e58470

79. Rosenberg MM, Ronen D, Lahav N, Nazirov E, Ravid S and **Friedler A.** (2013) High resolution characterization of myosin IIC tailpiece and its effect on filament assembly, *J Biol Chem*, 288(14):9779-89.
80. Reingewertz TH, Britan-Rosich E, Rotem-Bamberger S, Viard M, Jacobs A, Millerg A, Lee JY, Hwang Y, Blumenthal R, Kotler M, and **Friedler A** (2013) Mapping the Vif-A3G interaction using peptide arrays: a basis for anti-HIV lead peptides, *Bioorg Med Chem*, 21(12):3523-32
81. Bonsor DA , Weiss E , Iosub-Amir A , Reingewertz TH , Chen TW , Haas R , **Friedler A** , Fischer W , Sundberg EJ. (2013) Characterization of the translocation-competent complex between the Helicobacter pylori oncogenic protein CagA and the accessory protein CagF. *J Biol Chem*, 288(46):32897-909
82. Shahar OD , Gabizon R , Feine O , Alhadeff R , Ganoth A , Argaman L , Shimshoni E , **Friedler A** , Goldberg M. (2013) Acetylation of Lysine 382 and Phosphorylation of Serine 392 in p53 Modulate the Interaction between p53 and MDC1 In Vitro. *PLoS One*. 2013 Oct 23;8(10):e78472.
83. Amartely H , David A , Lebediker M , Benyamini H , Izraeli S , **Friedler A.** (2014) The STIL protein contains intrinsically disordered regions that mediate its protein-protein interactions. *Chem Comm*, 50(40):5245-7
84. Zeytuni N , Uebe R , Maes M , Davidov G , Baram M , Raschdorf O , **Friedler A** , Miller Y , Schüler D , Zarivach R. (2014) Bacterial magnetosome biomineralization--a novel platform to study molecular mechanisms of human CDF-related Type-II diabetes. *PLoS One*. 2014 May 12;9(5):e97154.
85. Gabizon R , **Friedler A.** (2014) Allosteric modulation of protein oligomerization: an emerging approach to drug design. *Front Chem*. 2014 Mar 24;2:9.
86. Tamir S , Rotem-Bamberger S , Katz C , Morcos F , Hailey KL , Zuris JA , Wang C , Conlan AR , Lipper CH , Paddock ML , Mittler R , Onuchic JN , Jennings PA , **Friedler A** , Nechushtai R. (2014) Integrated strategy reveals the protein interface between cancer targets Bcl-2 and NAF-1. *Proc Natl Acad Sci U S A*. 111(14):5177-82.
87. Zeytuni N , Uebe R , Maes M , Davidov G , Baram M , Raschdorf O , Nadav-Tsubery M , Kolusheva S , Bitton R , Goobes G , **Friedler A** , Miller Y , Schüler D , Zarivach R. (2014) Cation diffusion facilitators transport initiation and regulation is mediated by cation induced conformational changes of the cytoplasmic domain. *PLoS One*. 9(3):e92141.
88. Chandra K , Roy TK , Shalev DE , Loyter A , Gilon C , Gerber RB , **Friedler A.** (2014) A Tandem In Situ Peptide Cyclization through Trifluoroacetic Acid Cleavage. *Angew Chem Int Ed Engl*. 53(36):9450-5 (*Journal Frontispiece*)
89. Chandra K , Roy TK , Naoum JN , Gilon C , Gerber RB , **Friedler A.** (2014) A highly efficient in situ N-acetylation approach for solid phase synthesis. *Org Biomol Chem*. 12(12):1879-84. (*journal cover*)
90. Amartely H , Iosub-Amir A , **Friedler A.** (2014) Identifying protein-protein interaction sites using peptide arrays. *J Vis Exp*. 93:e52097
91. Iosub-Amir A. and **Friedler A.** (2014) Protein-protein interactions of ASPP2: an emerging therapeutic target. *Med Chem Comm* 5, 1435-1443 (*journal cover*)
92. Maes M. , Amit E. , Danieli T. , Lebediker M. , Loyter A. and **Friedler A.** (2014) The disordered region of Arabidopsis VIP1 binds the Agrobacterium VirE2 protein outside its DNA-binding site; *Protein Engineering, Design and Selection*, 27(11):439-46
93. Faust, O. , Bigman L. and **Friedler A.** (2014) A role of disordered domains in regulating protein oligomerization and stability *Chem Comm* 18;50(74)
94. Chandra K. , Naoum JN , Roy TK , Gilon C , Gerber RB and **Friedler A** (2015) Mechanistic Studies of Malonic Acid-Mediated in situ Acylation; *Biopolymers (peptide Science)* 104 (5), 495-505
95. Snir E., Amit E. , **Friedler A.** and Yitzchaik S. (2015) A highly sensitive square wave voltammetry based biosensor for kinase activity measurements; *Biopolymers (peptide Science)* 104(5), 515-520
96. Reingewertz TH , Iosub-Amir A , Bonsor D , Mayer G , Amartely H , **Friedler A** and Sundberg EJ (2015) An Intrinsically Disordered Region in the Proapoptotic ASPP2 Protein Binds to the Helicobacter pylori Oncoprotein CagA; *Biochemistry*, 54 (21), 3337-3347
97. Lebediker M., Maes M. and Friedler A. (2015): A screening methodology for purifying proteins with aggregation problems – Chapter 7 in "Methods in Molecular Biology: Insoluble Proteins" book (Springer), 1258:261-81
98. Amit E. , Obena R. , Wang YT , Zhuravel R , Reyes AJ , Elbaz S , Rotem D , Porath D , **Friedler A** , Chen YJ and Yitzchaik S (2015) Integrating proteomics with electrochemistry for identifying kinase biomarkers; *Chem Sci*, 6 (8), 4756-4766

99. Chandra K , Maes M and **Friedler A** (2015) Interactions of HIV-1 proteins as targets for developing anti-HIV-1 peptides; *Future Medicinal Chemistry* 7 (8), 1055-77
100. Iosub-Amir A. , Van Rosmalen M , Mayer G , Lebendiker M , Danieli T and **Friedler A** (2015) Highly homologous proteins exert opposite biological activities by using different interaction interfaces; *Scientific Reports*, 5, 11629
101. Amartely, H, David, A , Shamir, M, Lebendiker, M , Izraeli, S and **Friedler, A** (2016) Differential effects of zinc binding on structured and disordered regions in the multidomain STIL protein; *Chemical Science* 7(7) , 4140-4147
102. Chandra K, Das P, Mamidi S, Hurevich M, Iosub-Amir A, Metanis N, Reches M, **Friedler A.** (2016) Covalent Inhibition of HIV-1 Integrase by N-Succinimidyl Peptides. *ChemMedChem*. 11(18):1987-94
103. David A, Amartely H, Rabinowicz N, Shamir M, **Friedler A**, Izraeli S. (2016) Molecular basis of the STIL coiled coil oligomerization explains its requirement for de-novo formation of centrosomes in mammalian cells. *Sci Rep*. 6:24296.
104. Dwivedi M, Sukenik S, **Friedler A**, Padan E. (2006) The Ec-NhaA antiporter switches from antagonistic to synergistic antiport upon a single point mutation. *Sci Rep*. 6:23339
105. Koler M, Frank V, Amartely H, **Friedler A**, Vaknin A. Dynamic Clustering of the Bacterial Sensory Kinase BaeS (2016) *PLoS One*. 11(3):e0150349
106. Zhuravel R, Amit E, Elbaz S, Rotem D, Chen YJ, **Friedler A**, Yitzchaik S, Porath D. (2016) Atomic force microscopy characterization of kinase-mediated phosphorylation of a peptide monolayer. *Sci Rep*. 6:36793. doi: 10.1038/srep36793.
107. Postel S, Deredge D, Bonsor DA, Yu X, Diederichs K, Helmsing S, Vromen A, **Friedler A**, Hust M, Egelman EH, Beckett D, Wintrode PL, Sundberg EJ. (2016) Bacterial flagellar capping proteins adopt diverse oligomeric states. *Elife*. 24;5. pii: e18857.
108. Rimon O, Suss O, Goldenberg M, Fassler R, Yogev O, Amartely H, Propper G, **Friedler A**, Reichmann D. (2017) A Role of Metastable Regions and Their Connectivity in the Inactivation of a Redox-Regulated Chaperone and Its Inter-Chaperone Crosstalk. *Antioxid Redox Signal*. 27(15):1252-1267
109. Chandra K, Das P, Metanis N, **Friedler A**, Reches M. (2017) Peptide fibrils as monomer storage of the covalent HIV-1 integrase inhibitor. *J Pept Sci*. 23(2):117-121.
110. Oren T, Nimri L, Yehuda-Shnaidman E, Staikin K, Hadar Y, **Friedler A**, Amartely H, Slutzki M, Pizio AD, Niv MY, Peri I, Graeve L, Schwartz B. (2017) Recombinant ostreolysin induces brown fat-like phenotype in HIB-1B cells. *Mol Nutr Food Res*. 61(9)
111. Julian Petersen, Shane Wright, David Rodriguez, Pierre Matricon, Noa Lahav, Aviv Vromen, **Assaf Friedler**, Johan Strömqvist, Stefan Wennmalm, Jens Carlsson, and Gunnar Schulte (2017) Agonist-induced dimer dissociation as a macromolecular step in G protein-coupled receptor signaling. *Nature Commun.*, 8(1):226
112. Rimon A, Dwivedi M, **Friedler A**, Padan E. (2018) Asp133 Residue in NhaA Na⁺/H⁺ Antiporter Is Required for Stability Cation Binding and Transport. *J Mol Biol*. 430(6):867-880
113. Katz C, Low-Calle AM, Choe JH, Laptenko O, Tong D, Joseph-Chowdhury JN, Garofalo F, Zhu Y, **Friedler A**, Prives C. (2018) Wild-type and cancer-related p53 proteins are preferentially degraded by MDM2 as dimers rather than tetramers; *Genes Dev*. 32(5-6):430-447.
114. Amartely H, Avraham O, **Friedler A**, Livnah O, Lebendiker M. (2018) Coupling Multi Angle Light Scattering to Ion Exchange chromatography (IEX-MALS) for protein characterization; *Sci Rep*. 8(1):6907
115. Faust O, Grunhaus D, Shimshon O, Yavin E, **Friedler A**. (2018) Protein Regulation by Intrinsically Disordered Regions: A Role for Subdomains in the IDR of the HIV-1 Rev Protein.; *Chembiochem*. 19(15):1618-1624 (**Selected as VIP article**)
116. Samarasimhareddy M, Mayer D, Metanis N, Veprintsev D, Hurevich M and Friedler A (2019) A targeted approach for the synthesis of multi-phosphorylated peptides: a tool for studying the role of phosphorylation patterns in proteins (2019) *Organic & Biomolecular Chemistry*, 17(42):9284-9290
117. Iosub-Amir A, Bai F, Sohn Y, Song L, Tamir S, Marjault H, Mayer G, Karmi O, Jennings P, Mittler R, Onuchic J, Friedler A and Nechushtai R (2019) "The anti-apoptotic proteins NAF-1 and iASPP interact to drive apoptosis in cancer cells" *Chemical Science*, 10, 665-673, DOI: 10.1039/C8SC03390K (**Journal back cover**)

118. Mayer D, Damberger FF, Samarasimhareddy M, Feldmueller M, Vuckovic Z, Flock T, Bauer B, Mutt E, Zosel F, Allain FHT, Standfuss J, Schertler GFX, Deupi X, Sommer ME, Hurevich M, **Friedler A**, Veprintsev DB (2019) Distinct G protein-coupled receptor phosphorylation motifs modulate arrestin affinity and activation and global conformation. *Nat Commun.* 2019 Mar 19;10(1):1261.
119. Rimon A, Mondal R, **Friedler A** and Padan E. (2019) Cardiolipin is an Optimal Phospholipid for the Assembly, Stability, and Proper Functionality of the Dimeric Form of NhaA Na⁺/H⁺ Antiporter; *Sci Rep.* 9(1):17662.
120. Lahav N, Rotem-Bamberger S, Fahoum J, Dodson EJ, Kraus Y, Mousa R, Metanis N, **Friedler A**, Schueler-Furman O. (2020) Phosphorylation of the WWOX protein regulates its interaction with p73. *Chembiochem.* 21(13):1843-1851.
121. Mayer G, Shpilt Z, Bressler S, Marcu O, Schueler-Furman O, Tshuva EY, **Friedler A**. (2020) Targeting an interaction between two disordered domains using a designed peptide. *Chemistry – A European Journal.* 26(45):10156
122. Samarasimhareddy M, Shamir M, Shalev DE, Hurevich M, **Friedler A**. (2020) A Rapid and Efficient Building Block Approach for Click Cyclization of Peptoids. *Front Chem.* 8:405.
123. Samarasimhareddy M, Mayer G, Hurevich M, **Friedler A**. (2020) Multiphosphorylated peptides: importance, synthetic strategies, and applications for studying biological mechanisms. *Org Biomol Chem.* 18(18):3405-3422
124. Garfagnini T, Levi-Kalishman Y, Harries D, **Friedler A**. (2021) Osmolytes and crowders regulate aggregation of the cancer-related L106R mutant of the Axin protein. *Biophys J.* 120(16):3455-3469.
125. Reyes AJF, Kitata RB, Dela Rosa MAC, Wang YT, Lin PY, Yang PC, **Friedler A**, Yitzchaik S, Chen YJ. (2021) Integrating site-specific peptide reporters and targeted mass spectrometry enables rapid substrate-specific kinase assay at the nanogram cell level. *Anal Chim Acta.* 2021; 1155:338341.
126. Mondal R, Rimon A, Masrati G, Ben-Tal N, **Friedler A**, Padan E. (2021) Towards Molecular Understanding of the pH Dependence Characterizing NhaA of Which Structural Fold is Shared by Other Transporters. *J Mol Biol.*;433(19):167156.
127. Grunhaus, D, **Friedler, A** and Hurevich, M (2021) Automated Synthesis of Heavily Phosphorylated Peptides, *European journal of organic chemistry* 26, 3737-3742
128. Sohn YS, Losub-Amir A, Cardenas AE, Karmi O, Yahana MD, Gruman T, Rowland L, Marjault HB, Webb LJ, Mittler R, Elber R, Friedler A, Nechushtai R. (2022) A peptide-derived strategy for specifically targeting the mitochondria and ER of cancer cells: a new approach in fighting cancer. *Chem Sci.* 13(23):6929-6941.
129. Mayer G, Shpilt Z, Kowalski H, Tshuva EY, Friedler A. Targeting Protein Interaction Hotspots Using Structured and Disordered Chimeric Peptide Inhibitors.(2022) *ACS Chem Biol.* 17(7):1811-1823.
130. Joshi PN, Mervinetsky E, Solomon O, Chen YJ, Yitzchaik S, Friedler A. (2022) Electrochemical biosensors based on peptide-kinase interactions at the kinase docking site. *Biosens Bioelectron.* 207:114177.
131. Cardenas AE, Drexler CI, Nechushtai R, Mittler R, Friedler A, Webb LJ, Elber R. Peptide Permeation across a Phosphocholine Membrane: An Atomically Detailed Mechanism Determined through Simulations and Supported by Experimentation (2022). *J Phys Chem B.* 126(15):2834-2849.
132. Solomon O, Sapir H, Mervinetsky E, Chen YJ, Friedler A, Yitzchaik S. Kinase Sensing Based on Protein Interactions at the Catalytic Site. *Chemistry – A European Journal.* 28(17):e202200655.
133. Grunhaus D, Molina ER, Cohen R, Stein T, Friedler A, Hurevich M. Accelerated Multiphosphorylated Peptide Synthesis. (2022) *Org Process Res Dev.* 26(8):2492-2497.