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Prof. Hinanit Koltai, PhD, is a Senior Research Scientist at the Agricultural Research Organization, Volcani Center, Israel. She is the Editor of books and a member of Editorial boards in international scientific journals. She is a leading Author of more than 80 peer reviewed publications and more than 30 book chapters and invited reviews and she holds 9 patents. She teaches plant development and medical cannabis courses in Bar Ilan University, Israel.

Research in Koltai lab is focused on deciphering the "entourage effect" between cannabis compounds while specifying active pharmaceutical ingredients (API) from cannabis and their medical activity at the physiological and molecular levels in human cells and tissues. The lab combines state of the art chemistry and cellular and molecular biology tools, making novel discoveries in this field. Research results are IP protected; they are published in international scientific journals and form a scientific basis for the development of the new generation of cannabis-based medical products.

List of peer reviewed publications, last 5 years:

59. Kumar M., Pandya-Kumar N., Dam A., Haor H., Mayzlish-Gati E., Belausov E., Winger S., Abu-Abied M., McErlean C.S.P., Bromhead L.J., Prandi C., Kapulnik Y. and **Koltai H.** (2015).

Arabidopsis response to low-phosphate conditions includes active changes in actin filaments and PIN2 polarization and is dependent on strigolactone signaling.

Journal of Experimental Botany, 66: 1499-1510.

60. Glazer I., Santhi SV., Salamea L., Nakache Y., **Koltai H.**, Soroker, V. (2015).

Attraction of entomopathogenic nematodes *Steinernema carpocapsae* and *Heterorhabditis bacteriophora* to the red palm weevil (*Rhynchophorus ferrugineus*).

Biological Control, 83: 75–81.

61. **Koltai H.** (2015).

Cellular events of strigolactone signaling and their crosstalk with auxin in roots.

Journal of Experimental Botany, 66: 4855-4861.

62. Graber E.R., Tsechansky L., Mayzlish-Gati E., Shema R. ^s, **Koltai H.** (2015).

Humic substances extract from biochar reduces *Arabidopsis* root hair density and length under P-sufficient and P-starvation conditions.

Plant and Soil, 1-10.

- 63.** Mayzlish-Gati E., Laufer D., Shaknof J., Sananes A., Bier A., Ben-Harosh S., Belausov E., Grivas C.F., Johnson M.D., Yarden R.I., Artuso E., Levi O., Genin O., Prandi C., Khalaila I., Pines M., Kapulnik Y. and **Koltai H.** (2015)
Strigolactone analogues act as new anti-cancer agents in inhibition of breast cancer in xenograft model.
Cancer Biology and Therapy, 1-7.
- 64.** Yaari M., Doron-Faigenboim A., **Koltai H.**, Salame L. and Glazer I. (2015)
Transcriptome analysis of stress tolerance in entomopathogenic nematodes of the genus *Steinernema*
The International Journal for Parasitology 46: 83–95.
- 65.** Fridlender M., Lacey B., Wininger S., Dam A., Kumari P., Belausov E., Tsemach H., Kapulnik Y., Prandi C. and **Koltai H.** (2015)
Influx and Efflux of Strigolactones are Actively Regulated and Involve the Cell Trafficking System.
Molecular Plant 8: 1809-1812.
- 66.** Fridlender M., Kapulnik Y. and **Koltai H.** (2015)
Plant derived substances with anti-cancer activity: from folklore to practice
Frontier in Plant Science- Crop Science and Horticulture 6: 799.
- 67.** Prandi C., Artuso E., Ghibaudi E., Lacey B., Marabello D., Vinciguerra D., Lombardi C., **Koltai H.**, Kapulnik Y., Novero M., Occhiato E., Scarpi D., Parisotto S., Deagostino A., Venturello P., Mayzlish-Gati, E., Bier A. (2015)
Stereochemical Assignment of Strigolactone analogues confirms their selective biological activity.
Journal of Natural Products, 78: 2624–2633.
- 68.** Turgeman T., Leubinski O., Roth-Bejerano N., Kagan-Zur V., Kapulnik Y., **Koltai H.**, Zaady E., Ben-Shabat S., Guy O., Lewinsohn E., Sitrit Y. (2015)
The role of pre-symbiotic auxin signaling in ectendomycorrhiza formation between the desert truffle *Terfezia boudieri* and *Helianthemum sessiliflorum* Mycorrhiza.
Mycorrhiza, 1-11.
- 69.** Kapulnik Y., **Koltai H.** (2016)
Fine-tuning by strigolactones of root response to low phosphate.
Journal of Integrative Plant Biology, 58: 203–212.
- 70.** Croglia, M.P., Haake, J.M., Ryan, C.P., Wang, V.S., Lapier, J., Schlarbaum, J.P., Dayani, Y., Artuso, E., Prandi, C., **Koltai, H.** and Agama, K., (2016). Analogs of the novel phytohormone, strigolactone, trigger apoptosis and synergize with PARP inhibitors by inducing DNA damage and inhibiting DNA repair.
Oncotarget, 7: 13984-14001.
- 71.** Madmon O. ⁵, Mazuz M., Kumari P., Dam A., Ion A., Mayzlish-Gati E., Belausov E., Wininger S., Abu-Abied M., McErlean C.S.P., Bromhead L.J., Perl-Treves R., Prandi C., Kapulnik Y., and **Koltai H.** (2016)

Expression of MAX2 under SCARECROW promoter enhances the strigolactone/MAX2 dependent response of Arabidopsis roots to low-phosphate conditions.
Planta, 243: 1419–1427.

72. Mayzlish-Gati E., Fridlender M., Nallathambi R., Selvaraj G., Nadarajan S., and **Koltai H.** (2017)
Review on anti-cancer activity in wild plants of the Middle East.
Current Medicinal Chemistry, 25:4656-4670.

73. Mendelovich M., Shoshana M., Fridlender M., Mazuz M., Namdera D., Nallathambiah R., Selvaraja G., Kumari P., Ion A., Wininger S., Nasser A., Samara M., Sharvit Y., Kapulnik Y., Dudai N., **Koltai H.** (2017)
Ephedra foeminea active compounds affect cell viability and actin structures in cancer cell lines.
Journal of Medicinal Plants Research, 11:690-702.

74. Nallathambi R., Mazuz M., Ion A., Selvaraj G., Weininger S., Fridlender M., Nasser A., Sagee O., Kumari P., Nemichenizer D. and Mendelovitz M., Firstein N., Hanin O., Konikoff F., Kapulnik Y., Naftali T., **Koltai H.** (2017).
Anti-Inflammatory activity in colon models is derived from Δ^9 -Tetrahydrocannabinolic Acid that interacts with additional compounds in Cannabis extracts.
Cannabis and Cannabinoid Research, 2: 167-182.

75. Namdar D., **Koltai H.** (2017).
Medical Cannabis for the Treatment of Inflammation.
Natural Product Communications, 13:1934578X1801300304.

76. Yaniv Z., **Koltai H.** (2018)
Calotropis procera, Apple of Sodom ethnobotanical review and medicinal activities
Journal of Plant Sciences, 65:55-61.

77. Nallathambi R., Mazuz M., Namdar D., Shik M. ⁵, Namintzer D. ⁵, Vinayaka A.C., Ion A., Faigenboim A., Nasser A., Laish I., Konikoff F.M, **Koltai H.** (2018)
Identification of synergistic interaction between cannabis-derived compounds for cytotoxic activity in colorectal cancer cell lines and colon polyps that induces apoptosis-related cell death and distinct gene expression.
Cannabis and Cannabinoid Research, 3:120-135.

78. Bernstein, N., Akram, M., Daniyal, M., **Koltai, H.**, Fridlender, M., Gorelick, J. (2018)
Anti-inflammatory potential of medicinal plants: a source for therapeutic secondary metabolites.
Advances in Agronomy, 150:131-181.

79. Prandi C., Blangetti M., Namdar D., **Koltai H.** (2018)
Structure-activity relationship of cannabis derived compounds for the treatment of neuronal activity-related diseases.
Molecules, 23:1526.

80. Namdar D., Mazuz M., Ion A., **Koltai H.** (2018)

Variation in the compositions of cannabinoid and terpenoids in *Cannabis sativa* derived from inflorescence position along the stem and extraction methods.
Industrial Crops and Products, 113: 376-382.

81. Argenziano M., Lombardi C., Ferrara B., Trotta F., Caldera F., Blangetti M., **Koltai H.**, Kapulnik Y., Yarden R., Gigliotti L. and Dianza U. (2018)
Glutathione/pH-responsive nanosponges enhance strigolactone delivery to prostate cancer cells.
Oncotarget, 9:35813.

82. Namdar, D., Charuvi, D., Ajjampura, V., Mazuz, M., Ion, A., Kamara, I. and **Koltai, H.** (2019)
LED lighting affects the composition and biological activity of *Cannabis sativa* secondary metabolites.
Industrial Crops and Products, 132:177-185.

83. Koltai, H., Poulin, P. and Namdar, D. (2019)
Promoting cannabis products to pharmaceutical drugs.
European Journal of Pharmaceutical Sciences 132:118-120.

84. Namdar D., Voet H., Ajjampura V., NadarRajan S., Mayzlish-Gati E., Mazuz M., Shalev N. and **Koltai H.** (2019)
Terpenoids and phytocannabinoids co-produced in *Cannabis sativa* strains show specific Interaction for cell cytotoxic activity.
Molecules, in press

85. Goldstein Ferber S., Namdar D., Hen-Shoval D., Eger G., **Koltai H.**, Shoval G., Shbiro L. and Weller A. (2019)
The “entourage effect”: terpenes coupled with cannabinoids for the treatment of mood and anxiety disorders
Current Neuropharmacology, DOI: 10.2174/1570159x17666190903103923

86. Mazuz M., Tiroler A.^s, Moyal L., Hodak E., Rajan S.N., Vinayaka A.C., Gorovitz-Haris B., Lubin I., Drori A., Drori G., Van Cauwenberghe O., Faigenboim A., Namdar D., Amitay-Laish I., **Koltai H.** (2020)
Synergistic cytotoxic activity of cannabinoids from *Cannabis sativa* against Cutaneous T Cell Lymphoma (CTCL) *in-vitro* and *ex-vivo*.
Oncotarget, in press.

87. Koltai H. and Namdar D. 2020. Cannabis phytomolecule 'entourage': from domestication to medical use.
Trends in Plant Sciences, in press.