YONGHUI DONG

EDUCATION

Oct.2010 | Jun.2014

Trento University, Italy

Fondazione Edmund Mach, Italy

PhD in Analytical Chemistry

Supervisors: Dr.Pietro Franceschi, Dr.Fulvio Mattivi & Prof.Guella Graziano

Thesis: Mass Spectrometry Imaging: Looking Fruits at Molecular Level

Jun.2012 | Dec.2012

Max Planck Institute for Chemical Ecology, Germany

Visiting PhD student

Supervisor: Dr.Ales Svatos

Project: Mass spectrometry imaging of surface lipids on intact *Drosophila melanogaster* flies

Sep.2008 | Sep.2010

Bologna University, Italy

Munich University of Technology, Germany

BOKU University, Austria

Triple MSc. in Horticulture Science

Supervisors: Dr. Stefano Tartarini, Dr. Luca Dondini & Prof. Dieter Treutter

Thesis: QTL Analysis of Sugars and Organic Acids in Apricot

Sep.2003 | Jun.2006

Northwest A&F University, China

BSc. in Bioengineering

Supervisor: Prof. Zhihui Cheng

Thesis: Effects of UV-C on the control of cucumber powdery mildew

CONTACT

yonghui.dong@gmail.com

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ResearchGate

+972586302077

RESEARCH INTERESTS

- Mass Spectrometry Imaging
- Metabolomics
- Chemoinformatics

SKILLS

Programming Languages:

- R (9/10)
- Python (7/10)
- Git/GitHub (6/10)
- Docker (6/10)
- HTML/CSS (6/10)

Last updated on 2022-06-02.

RESEARCH EXPERIENCE

Jan. 2021 | Now

Researcher

Blavatnik Center for Drug Discovery, Tel Aviv University, Israel

Dec. 2014 | Dec. 2020

Postdoctoral Research Fellow

Weizmann Institute of Science, Israel

Supervisor: Prof. Asaph Aharoni

Jul. 2014 | Nov.2014

Research Associate

Trento University, Italy

Supervisor: Prof.Guella Graziano

PUBLICATIONS

2022

22. The metabolic and proteomic repertoires of periderm tissue in skin of the reticulated Sikkim cucumber fruit

Horticulture Research, doi: 10.1093/hr/uhac092

Gulab Chand Arya, **Yonghui Dong** (co-first author), Uwe Heinig, Nir Shahaf, Yana Kazachkova, Elinor Aviv-Sharon, Gal Nomberg, Ofir Marinov, Ekaterina Manasherova, Asaph Aharoni, Hagai Cohen

21. Quantitative Trait Loci Mapping and Identification of Candidate Genes Linked to Fruit Acidity in Apricot Q13 (*Prunus armeniaca L.*)

Frontiers in Plant Science, doi: 10.3389/fpls.2022.838370

Luca Dondini, Cecilia Domenichini, **Yonghui Dong**, Fabio Gennari, Daniele Bassi, Stefano Foschi, Martina Lama, Marco Adami, Paolo De Franceschi, Claudia Cervellati, Lorenzo Bergonzoni, Sara Alessandri, Stefano Tartarini

20. RawHummus: an R Shiny App for Automated Raw Data Quality Control in Metabolomics

Bioinformatics, btac040

Yonghui Dong, Yana Kazachkova, Meng Gou, Liat Morgan, Tal Wachsman, Ehud Gazit, Rune Isak Dupont Birkler

2021

19. CCWeights: an R package and web application for automated evaluation and selection of weighting factors for accurate quantification using linear calibration curve

Bioinformatics Advances, 1(1), vbab029

Yonghui Dong, Tal Wachsman, Liat Morgan, Ehud Gazit, Rune Isak Dupon Birkler

18. Characterization of the PRODUCTION OF ANTHOCYANIN PIGMENT 1 Arabidopsis Dominant Mutant using DLEMMA Dual Isotope Labeling Approach
Phytochemistry, 186
Yonghui Dong, Liron Feldberg, Ilana Rogachev, Asaph Aharoni

17. The GORKY glycoalkaloid transporter is indispensable for preventing tomato bitterness
Nature Plant, 7, 468-480
Yana Kazachkova, Itay Zemach, Sayantan Panda , Samuel Bocobza , Andrii Vainer, Ilana Rogachev, **Yonghui Dong**, Shifra Ben-Dor , Dorottya Veres , Christa Kanstrup , Sophie Konstanze Lambertz, Christoph Crocoll, Yangjie Hu, Eilon Shani, Simon Michaeli, Hussam Hassan Nour-Eldin, Dani Zamir, Asaph Aharoni

2020

16. High mass resolution, spatial metabolite mapping enhances the current plant gene and pathway discovery toolbox
New Phytologist, 2020, 228:1986-2002.
Yonghui Dong, Prashant Sonawane, Hagai Cohen, Guy Polturak, Liron Feldberg, Shelly Hen Avivi, Ilana Rogachev, Asaph Aharoni

15. Rhizosphere microbiome mediates systemic root metabolite exudation by root-to-root signaling
Proceedings of the National Academy of Sciences, 2020, 7:3874-3883.
Elisa Korenblum, **Yonghui Dong**, Jedrzej Szymanski, Sayantan Panda, Adam Jozwiak, Hassan Massalha, Sagit Meir, Ilana Rogachev, Asaph Aharoni

2019

14. Miso: an R package for multiple isotope labeling assisted metabolomics data analysis
Bioinformatics, 2019, 35:3524-3526.
Yonghui Dong, Liron Feldberg, Asaph Aharoni

13. A Multilevel Study of Melon Fruit Reticulation Provides Insight into Skin Ligno-suberization Hallmarks
Plant Physiology, 2019, 179:1486-1501.
Hagai Cohen, **Yonghui Dong**, Jedrzej Szymanski, Justin Lashbrooke, Sagit Meir, Efrat Almekias-Siegl, Viktoria Valeska Zeisler-Diehl, Lukas Schreiber, Asaph Aharoni

12. In plaque-mass spectrometry imaging of a bloom-forming alga during viral infection reveals a metabolic shift towards odd-chain fatty acid lipids
Nature Microbiology, 2019, 3:527-538.
Guy Schleyer, Nir Shahaf, Carmit Ziv, **Yonghui Dong**, Roy A Meoded, Eric JN Helfrich, Daniella Schatz, Shilo Rosenwasser, Ilana Rogachev, Asaph Aharoni, Jörn Piel, Assaf Vardi

2018

11. DLEMMA-MS-imaging for identification of spatially localized metabolites and metabolic network map reconstruction
Analytical Chemistry, 2018, 17:10231-10238.
Liron Feldberg, **Yonghui Dong** (co-first author), Uwe Heinig, Ilana Rogachev, Asaph Aharoni

10. Mapping of cell wall aromatic moieties and their effect on hygroscopic movement in the awns of stork's bill
Cellulose, 2018, 25: 3827-3841.
Yael Abraham, **Yonghui Dong**, Asaph Aharoni, Rivka Elbaum

2017

09. TLC surface integrity affects the detection of alkali adduct ions in TLC-MALDI analysis
Analytical and Bioanalytical Chemistry, 2017, 409: 5661-5666.
Yonghui Dong, Ruggero Ferrazza, Andrea Anesi, Graziano Guella, Pietro Franceschi

08. Engineered gray mold resistance, antioxidant capacity, and pigmentation in betalain-producing crops and ornamentals
Proceedings of the National Academy of Sciences, 2017, 14: 9062-9067.
Guy Polturak, Noam Grossman, David Vela-Corcia, **Yonghui Dong**, Adi Nudel, Margarita Pliner, Maggie Levy, Ilana Rogachev, Asaph Aharoni

07. Impact of tissue surface properties on the desorption electrospray ionization imaging of organic acids in grapevine stem
Rapid Communications in Mass Spectrometry, 2016, 30: 711-718.
Yonghui Dong, Graziano Guella, Pietro Franceschi

2016

06. More than pictures: when MS imaging meets histology
Trends in Plant Science, 2016, 21: 686-698.
Yonghui Dong, Bin Li, Asaph Aharoni

05. Sample preparation for mass spectrometry imaging of plant tissues: a review
Frontiers in plant science, 2016.
Yonghui Dong, Bin Li, Sergey Malitsky, Ilana Rogachev, Asaph Aharoni, Filip Kaftan, Aleš Svatoš, Pietro Franceschi

04. Identification of microRNAs and their targets associated with fruit-bagging and subsequent sunlight re-exposure in the "Granny Smith" apple exocarp using high-throughput sequencing
Frontiers in plant science, 2016.
Dong Qu, Fei Yan, Rui Meng, Xiaobing Jiang, Huijuan Yang, Ziyi Gao, **Yonghui Dong**, Yazhou Yang, Zhengyang Zhao

03. Analytical capabilities of mass spectrometry imaging and its potential applications in food science
Trends in Food Science & Technology, 2016, 47: 50-63.
Bin Li, Sage JB Dunham, **Yonghui Dong**, Sohee Yoon, Maomao Zeng, Jonathan V Sweedler

2015

02. High production of small organic dicarboxylate dianions by DESI and ESI
Journal of The American Society for Mass Spectrometry, 2015, 26: 386-389.
Yonghui Dong, Graziano Guella, Fulvio Mattivi, Pietro Franceschi

2012

01. Combining intensity correlation analysis and MALDI imaging to study the distribution of flavonols and dihydrochalcones in Golden Delicious apples
Journal of experimental botany, 2012, 63: 1123-1133.
Pietro Franceschi, **Yonghui Dong**, Kerstin Strupat, Urska Vrhovsek, Fulvio Mattivi

SOFTWARE

01. MSbox
A series of common mass spectrometry tools. It allows checking element isotopes, calculating (isotope labelled) exact monoisitopic mass, m/z values and mass accuracy, and inspecting possible contaminant mass peaks, examining possible adducts in electrospray ionization (ESI) and Matrix-Assisted Laser Desorption Ionization (MALDI) ion sources.
GitHub

02. Miso
An efficient tool for fishing out labeled molecules from single, dual or multiple isotope labeling experiment.
GitHub, Scholar

03. CCWeights
The accuracy of any analytical method highly depends on the selection of an appropriate calibration model. CCWeights is designed to automatically assess & select the best weighting factors (WF) for accurate metabolite quantification using the linear calibration curve.
GitHub, Scholar

04. RawHummus
Robust and reproducible data is essential to ensure high-quality results for metabolomics studies where detector sensitivity drifts, retention time, and mass accuracy shifts frequently occur. RawHummus is designed to automatically detect measurement bias & verify system consistency.
GitHub, Scholar

POSTERS & TALKS

2022 **How vampires suck blood? (Talk)**
First Israel Metabolomics Meeting (Israel)

Software solutions in untargeted and targeted metabolomics (Poster)
First Israel Metabolomics Meeting (Israel)

2021 **Pixel-wise Colocalization Analysis for Metabolite Identification in Mass Spectrometry Imaging (Talk)**
Waterman Seminar Series on Bioinformatics (Germany)

2017 **Application of MS Imaging in Plant Sciences (Talk)**
Mass Spectrometry Imaging Symposium (France)

More than Pictures: When MS Imaging Meets Histology (Talk)
Spring School for Advanced Imaging in Biological Research (Israel)

2015 **Mass Spectrometry Imaging of Plant Metabolites (Poster)**
Isranalytica 2015 (Israel)

2014 **Tissue Surface Properties Jeopardize Quantitative DESI Imaging of Organic Aicds in Grapevine Stem (Poster)**
20th International Mass Spectrometry Conference (Switzerland)

2013 **MS Imaging of Metabolites in Fruits (Poster)**
3rd MS Food day (Italy)

2012 **MS Imaging of Small Metabolites in Fruits (Talk)**
Ourense Conference on Imaging Mass Spectrometry (Spain)

HONORS & AWARDS

2014 **COST Action FA1101 trainee fellowship in saffronomics, Spain**

2011 **Trento University PhD scholarship, Italy**

2010 **FEM GMPF scholarship, Italy**

2008 **Erasmus Mundus Scholarship, European Union**

2005 **Undergraduate Mathematical Modeling Contest, First Prize, China**