

## 基本資料

張元哲 (Yuna-Jhe Chang)

專案助理教授

聯絡分機: 12380(辦公室) ; 11821(實驗室)

聯絡信箱: [jeffchang@csmu.edu.tw](mailto:jeffchang@csmu.edu.tw)



## 學歷

中臺科技大學醫事檢驗技術學系(學士)(2005.9-2007.6)

中山醫學大學醫學分子毒理學研究所(碩士)(2007.9-2009.7)

中山醫學大學醫學研究所(博士)(2009.9-2014.1)

## 經歷

中山醫學大學公共衛生學系(博士後研究員)(2015.7-2016.7)

中山醫學大學職業安全衛生學系(博士後研究員)(2016.8-2020.1)

中山醫學大學職業安全衛生學系(專案助理教授)(2020.2-迄今)

## 研究專長

質譜分析技術

基因鍵結體學

暴露體學

環境毒化物分析

濫用(成癮)藥物檢驗

## 研究方向

本人專長為運用各式質譜儀搭配層析分離技術，開發目標式(targeted)或非目標式(untargeted)分析法探究毒(化)物暴露後體內新生成的生物指標。目前研究方向包含 (1) 毒(化)物暴露後造成基因鍵結修飾全貌探究、(2) 環境毒物或化療藥物引起的各種基因交聯產物研究、(3) 吸菸與檳榔嚼食產生的具致癌性特有亞硝胺、(4) 環境毒(化)物於人體的暴露監測。

## 研究著作資料 (2012-2020)

### A. 期刊論文 (SCI) :

1. Chiung-Wen Hu, **Yuan-Jhe Chang (Co-first Author)**, Marcus S. Cooke, Mu-Rong Chao (2019, Dec). DNA crosslinkomics: a tool for the comprehensive assessment of inter-strand crosslinks using high resolution mass spectrometry. *Analytical Chemistry* (Impact factor = **6.785**), 91, 15193-15203. (SCI, Ranking in CHEMISTRY, ANALYTICAL: 7/86 = **8.1%**). MOST 106-2314-B-040-015- MY3.
2. Chiung-Wen Hu, **Yuan-Jhe Chang (Co-first Author)**, Cheng-Chieh Yen, Jian-Lian Chen, Rajendra Bose Muthukumar, Mu-Rong Chao (2019, Nov). 15N-labelled nitrite/nitrate tracer analysis by LC-MS/MS: urinary and fecal excretion of nitrite/nitrate following oral administration to mice. *Free Radical Biology and Medicine* (Impact factor = **6.170**), 143, 193-202. (SCI, Ranking in ENDOCRINOLOGY & METABOLISM: 16/143 = **11.2%**). MOST 106-2314-B- 040-015-MY3.
3. Marcus S. Cooke, Chiung-Wen Hu, **Yuan-Jhe Chang**, Mu-Rong Chao (2018, Dec). Urinary DNA Adductomics – A Novel Approach for Exposomics . *Environment International* (Impact factor = **7.577**), S0160-4120(18)31833-6. (SCI, Ranking in ENVIRONMENTAL SCIENCES: 18/265 = **6.8%**). MOST 106-2314-B-040-015-MY3.
4. Chiung-Wen Hu, Marcus S. Cooke, **Yuan-Jhe Chang**, Mu-Rong Chao (2018, Sep). Direct-acting DNA ethylating agents associated with tobacco use primarily originate from the tobacco itself, not combustion. *Journal of Hazardous Materials* (Impact factor = **9.038**), 358, 397-404. (SCI, Ranking in ENVIRONMENTAL SCIENCE: 8/265 = **3.0%**). MOST 106-2314-B-040-015- MY3.
5. **Yuan-Jhe Chang**, Marcus S. Cooke, Chiung-Wen Hu, Mu-Rong Chao (2018, Aug). Novel approach to integrated DNA adductomics for the assessment of in vitro and in vivo environmental exposures. *Archives of Toxicology* (Impact factor = **5.059**), 92, 2665-2680. DOI: 10.1007/s00204-018-2252-6. (SCI, Ranking in TOXICOLOGY: 9/92 = **9.8%**). MOST 106-2314-B-040-015-MY3.
6. Shih-Chung Chang, Inn Lee, Hua Ting, **Yuan-Jhe Chang**, Nae-Cherng Yang (2018, Jul). Parapyruvate, an Impurity in Pyruvate Supplements, Induces Senescence in Human Fibroblastic Hs68 Cells via Inhibition of the  $\alpha$ - Ketoglutarate Dehydrogenase Complex. *Journal of Agricultural and Food Chemistry* (Impact factor = **4.192**), 66, 7504-7513. DOI: 10.1021/acs.jafc.8b01138. (SCI, Ranking in AGRICULTURE, MULTIDISCIPLINARY: 4/58 = **6.9%**).
7. **Yuan-Jhe Chang**, Ya-Chun Chang, Rosa Huang Liu, Chia-Wen Chen, Inn Lee, Nae-Cherng Yang (2018, May). Resveratrol Can Be Stable in a Medium Containing Fetal Bovine Serum with Pyruvate but Shortens the Lifespan of Human Fibroblastic Hs68 Cells. *Oxidative Medicine and Cellular Longevity* (Impact factor = **5.076**), 2371734. DOI: 10.1155/2018/2371734. (SCI, Ranking in CELL BIOLOGY: 56/195 = **28.7%**). MOST 102-2320-B-040-016-MY3.
8. Chiung-Wen Hu, **Yuan-Jhe Chang (Co-first Author)**, Jian-Lian Chen, Yu-Wen Hsu, Mu-Rong Chao (2018, Mar). Sensitive Detection of 8-Nitroguanine in DNA by Chemical Derivatization Coupled with Online Solid-Phase Extraction LC-MS/MS. *Molecules*

- (Impact factor = **3.267**), 23, 605-618. (SCI, Ranking in CHEMISTRY, MULTISCIPLINARY: 70/177 = **39.5%**). MOST 105-2314-B-040-005.
9. Chiung-Wen Hu, **Yuan-Jhe Chang**, Yu-Wen Hsu, Jian-Lian Chen, Tsu-Shing Wang, Mu-Rong Chao (2016, Oct). Comprehensive analysis of the formation and stability of peroxy-nitrite- derived 8-nitroguanine by LC-MS/MS: Strategy for the quantitative analysis of cellular 8-nitroguanine. *Free Radical Biology and Medicine* (Impact factor = **6.170**), 101, 348-355. (SCI, Ranking in ENDOCRINOLOGY & METABOLISM: 16/143 = **11.2%**). MOST 105-2314- B-040-005.
  10. Mu-Rong Chao, Ying-Ming Shih, Yu-Wen Hsu, Hung-Hsin Liu, **Yuan-Jhe Chang**, Bo-Huei Lin, Chiung-Wen Hu (2016, Apr). Urinary nitrite/nitrate ratio measured by isotope-dilution LC-MS/MS as a tool to screen for urinary tract infections. *Free Radical Biology and Medicine* (Impact factor = **6.170**), 93, 77- 83. (SCI, Ranking in ENDOCRINOLOGY & METABOLISM: 16/143 = **11.2%**). NSC 102-2632-B-040-001-MY3.
  11. **Yuan-Jhe Chang**, Mu-Rong Chao, Su-Chin Chen, Chih-Hong Chen, Yan-Zin Chang (2014, Apr). A high-throughput method based on microwave-assisted extraction and liquid chromatography-tandem mass spectrometry for simultaneous analysis of amphetamines, ketamine, opiates, and their metabolites in hair. *Analytical and Bioanalytical Chemistry* (Impact factor = **3.637**), 406, 2445-2455. (SCI, Ranking in CHEMISTRY, ANALYTICAL: 18/86 = **20.9%**). NSC 102-2113-M-040-003.
  12. **Yuan-Jhe Chang**, Keh-Liang Lin, Yan-Zin Chang (2013, May). Determination of Di-(2-ethylhexyl)phthalate (DEHP) metabolites in human hair using liquid chromatography-tandem mass spectrometry. *Clinica Chimica Acta* (Impact factor = **2.615**), 420, 155-159. (SCI, Ranking in MEDICAL LABORATORY TECHNOLOGY: 20/29 = **34.5%**).
  13. Pin Duo Lee, **Yuan-Jhe Chang**, Keh-Liang Lin, Yan-Zin Chang (2012, Jan). Simultaneous determination of  $\Delta^9$ -tetrahydrocannabinol and 11-nor-9-carboxy- $\Delta^9$ -tetrahydrocannabinol in oral fluid using isotope dilution liquid chromatography tandem mass spectrometry. *Analytical and Bioanalytical Chemistry* (Impact factor = **3.637**), 402, 851-859. (SCI, Ranking in CHEMISTRY, ANALYTICAL: 18/86 = **20.9%**).

## B. 研討會論文：

1. Jia-Wei Jian, **Yuan-Jhe Chang**, Pei-Shan Li, Chiung-Wen Hu, Mu-Rong Chao. Application of DNA Adductomics Approach for Non-Targeted Screening Formaldehyde-Derived DNA Adducts by LC-QqQ-MS/MS with Constant Neutral Loss Scanning. The 67th Annual Conference on Mass Spectrometry, pp.67, May 15-17, 2019, Tsukuba, Japan.
2. Pei-Shan Li, **Yuan-Jhe Chang**, Chiung-Wen Hu, Mu-Rong Chao. Comprehensive Characterization and Identification of DNA Adducts Induced by Formaldehyde with High-Resolution Mass Spectrometry-Based DNA Adductomics Approach. The 67th Annual Conference on Mass Spectrometry, pp.66, May 15-17, 2019, Tsukuba, Japan.
3. Yi-Jhen Wang, Chi-Syuan Liao, **Yuan-Jhe Chang**, Chiung-Wen Hu, Mu-Rong Chao. Simultaneous Analysis of Five Areca Nut-Specific Nitrosamines by Isotope-Dilution

Liquid Chromatography-Tandem Mass Spectrometry with On-Line Solid-Phase Extraction. The 67th Annual Conference on Mass Spectrometry, pp.63, May 15-17, 2019, Tsukuba, Japan.

4. Pin-Hsuan Wang, Pei-Shan Li, **Yuan-Jhe Chang**, Marcus S. Cooke, Chiung-Wen Hu, Mu-Rong Chao. Simultaneous analysis of urinary 8-oxo-7,8-dihydro-2'-deoxyadenosine and 2-hydroxy-2'-deoxyadenosine by LC-MS/MS. 7th Asia-Oceania Mass Spectrometry Conference, pp. 128, Dec 10-13, 2017, Biopolis, Singapore.
5. Pei-Shan Li, **Yuan-Jhe Chang**, Yi-Hung Tsai, Ying-Ming Shih, Chiung-Wen Hu, Mu-Rong Chao. Characteristics of methylated cytosine modification in the pleural effusion using LC-MS/MS. The 57th annual meeting of the Japanese respiratory society, pp 84, Apr 21-23, 2017, Tokyo, Japan. MOST 105-2314-B-040-005.
6. 張心怡, **張元哲**, 洪于承, 王苡蓁, 胡瓊文, 趙木榮(2020年09月)。唾液中5種檳榔特有生物鹼的液相層析串聯質譜法開發。第十七屆台灣質譜學會年會。pp. A22, Sep 1-3, 2020, 嘉義, 台灣。科技部:109-2314-B-040-004-MY2。
7. 杜姍容, **張元哲**, 李佩珊, 簡嘉葳, 胡瓊文, 趙木榮(2020年09月)。比較液相層析串聯質譜儀「恆定中性丟失模式」與「偽中性丟失模式」篩檢甲醛誘導的DNA鍵結物。第十七屆台灣質譜學會年會。pp. A20, Sep 1-3, 2020, 嘉義, 台灣。
8. 洪于承, **張元哲**, 李佩珊, 胡瓊文, 趙木榮。運用質譜法篩檢甲醛誘導的基因鍵結物。第十六屆台灣質譜學會研討會。pp. 121, Jul 3-5, 2019。台中, 台灣。
9. 趙木榮, 胡瓊文, **張元哲**(2016年06月)。質譜法探討香菸及檳榔中造成DNA烷基化毒物。第十三屆台灣質譜學會年會。pp. 110, Jun 27-19, 2016。高雄, 台灣。

## 研究計畫

1. 應用穩定同位素標定追蹤技術探討檳榔特有亞硝胺生成路徑及其特有基因鍵結物 (109-2314-B-040-004-MY2)。補助機構：科技部。起訖年月：2020/5/1-2021/10/31。擔任工作：主持人。經費總額：1,350,000。

## 受邀演講

1. **Yuan-Jhe Chang**, Marcus S. Cooke, Chiung-Wen Hu, Mu-Rong Chao. Measurement of the totality of DNA Adducts by Mass Spectrometry-Based Omics Approach. 17th Annual Conference of the Taiwan Society for Mass Spectrometry. pp. 73, Sep 1-3, 2020, Chiayi, Taiwan.