

Curriculum vitae

Personal data:

Name: Dr. Gábor Girst
Place and date of birth: Szeged, 21 October 1994
Nationality: Hungarian
E-mail: girst.gabor.02@szte.hu

Employment:

2022- **Assistant research fellow**
University of Szeged, Faculty of Pharmacy, Institute of Pharmacognosy

Studies:

2018-2022 University of Szeged, Faculty of Pharmacy, Institute of Pharmacognosy
PhD-studies
Pharmacognosy specialization
Supervisor: Prof. Dr. Attila Hunyadi, full professor
Title of thesis: Expanding the chemical space of natural antioxidants: studies on hydrocurcuminoid derivatives and protoflavone-indole hybrids
Defended: 29-11-2024 (*summa cum laude*)

2016-2018 University of Szeged, Faculty of Science and Informatics
Chemistry MSc
Pharmaceutical chemist specialization
Title of thesis: Preparation and investigation of non cytotoxic, xanthine oxidase inhibitor protoflavonoid derivatives (*in Hungarian*)

2013-2016 University of Szeged, Faculty of Science and Informatics
Chemistry BSc
Title of thesis: Preparation and characterization of halide and oxoanions intercalated CaFe-layered double hydroxides (*in Hungarian*)

2007-2013 Radnóti Miklós Grammar School, Szeged
Special math class

Internships:

2017 Summer internship at Pasinszki Laboratórium Bt.

2015 Summer internship at Szegedi Vízmű Zrt, Environment Department

Scientific activity:

2022 – New National Excellence Program 2022/23 scholarship

2021 – Certificate of participation – Erasmus project: Cooperation on innovation and exchange of good practice in the hypoglycemia diet for people with diabetes

2020 – New National Excellence Program 2020/21 scholarship

2017 – Annual Student Research Conference organized by faculties of Medicine, Dentistry, Pharmacy and Health Sciences and Social studies: **Special award**

Scientific publication:

Ashfaq, R.; Kovács, A.; Berkó, S.; Katona, G.; Paróczai, D.; Szécsényi, M.; Burián, K.; Vályi, P.; Veres, K.; **Girst, G.**; Hunyadi, A.; Polgár, T. F.; Budai-Szücs, M. Co-encapsulated apigenin and clove oil in nanostructured lipid carriers for enhanced periodontal disease therapy. *Journal of Drug Delivery Science and Technology* **2026**, *115*, 107644. (Q1 - 2024)

Lopes, F.; **Girst, G.**; Rincón, R.; Ferreira, R. J. F.; Gonçalves, L. M.; Saraiva, L.; Wang, H.-C.; Cuendet, M.; Hunyadi, A.; Santos, M. M. M. Hybrid Molecules of p53 Activators and Protoflavones to Target Multiple Myeloma. *ChemMedChem* **2025**, *00*, e202500600 (Q1 - 2024)

Laczkó, D.; Chu, E.-L.; Chang, C.-C.; Chang, F.-R.; **Girst, G.**; Gáti, T.; Tóth, G.; Könczöl, Á.; Hunyadi, A. LC-MS/MS Fingerprinting Analysis of Cyanotis arachnoidea Extracts: Process-Related Artifacts in Anabolic Food Supplements. *ACS Omega* **2025**, *10* (18), 18605-18614. (Q1 - 2024)

Háznagy, M. B.; **Girst, G.**; Vágvölgyi, M.; Cholke, K.; Krishnan, S. R.; Gertsch, J.; Hunyadi, A. Semisynthetic Ecdysteroid Cinnamate Esters and tert-Butyl Oxime Ether Derivatives with Trypanocidal Activity. *J. Nat. Prod.* **2024**, *87* (10), 2478-2486. (Q1)

Ahmed, S.H.H.; Tayeb, B.A.; Gonda, T.; **Girst, G.**; Szőri, K.; Berkecz, R.; Zupkó, I.; Minorics, R.; Hunyadi, A. Thymoquinone-protoflavone hybrid molecules as potential antitumor agents. *PLoS One* **2024**, *19*, e0291567. (Q1)

Najem, A.; Campos, O. S.; **Girst, G.**; Raji, M.; Hunyadi, A.; García-Antón, J.; Bellaouchou, A.; Amin, H. M. A.; Boudalia, M. Experimental and DFT Atomistic Insights into the Mechanism of Corrosion Protection of Low-Carbon Steel in an Acidic Medium by Polymethoxyflavones from Citrus Peel Waste. *J. Electrochem. Soc.* **2023**, *170* (9), 093512. (Q1)

Girst, G.; Lopes, E. A.; Gonçalves, L. M.; Espadinha, M.; Kúsz, N.; Wang, H.-C.; Santos, M. M. M.; Hunyadi, A. Hybrid molecules of protoflavones and spirooxindole derivatives with selective cytotoxicity against triple-negative breast cancer cells. *RSC Medicinal Chemistry* **2023**, *14*, 1778-1786. (Q1)

Ahmed, S. H. H., Gonda, T., Agbadua, O. G., **Girst, G.**, Berkecz, R., Kúsz, N., Tsai, M.-C., Wu, C.-C., Balogh, G. T., Hunyadi, A., Preparation and Evaluation of 6-Gingerol Derivatives as Novel Antioxidants and Antiplatelet Agents. *Antioxidants* **2023**, *12* (3), 744. (D1)

Girst, G., Ötvös, S. B., Fülöp, F., Balogh, G. T., & Hunyadi, A., Pharmacokinetics-Driven Evaluation of the Antioxidant Activity of Curcuminoids and Their Major Reduced Metabolites—A Medicinal Chemistry Approach. *Molecules* **2021**, *26* (12), 3542. (Q1)

Latif, A. D.; Jernei, T.; Podolski-Renić, A.; Kuo, C.-Y.; Vágvölgyi, M.; **Girst, G.**; Zupkó, I.; Develi, S.; Ulukaya, E.; Wang, H.-C.; Pešić, M.; Csámpai, A.; Hunyadi, A., Protoflavone-Chalcone Hybrids Exhibit Enhanced Antitumor Action through Modulating Redox Balance, Depolarizing the Mitochondrial Membrane, and Inhibiting ATR-Dependent Signaling. *Antioxidants* **2020**, 9 (6), 519. (Q2)

Vágvölgyi, M.; **Girst, G.**; Kúsz, N.; Ötvös, S. B.; Fülöp, F.; Hohmann, J.; Servais, J.-Y.; Seguin-Devaux, C.; Chang, F.-R.; Chen, M. S.; Chang, L.-K.; Hunyadi, A., Less Cytotoxic Protoflavones as Antiviral Agents: Protoapigenone 1'-O-isopropyl ether Shows Improved Selectivity Against the Epstein–Barr Virus Lytic Cycle. *IJMS* **2019**, 20 (24), 6269. (D1)

Ötvös, S. B.; Vágvölgyi, M.; **Girst, G.**; Kuo, C.-Y.; Wang, H.-C.; Fülöp, F.; Hunyadi, A., Synthesis of Nontoxic Protoflavone Derivatives through Selective Continuous-Flow Hydrogenation of the Flavonoid B-Ring. *ChemPlusChem* **2018**, 83 (2), 72-76. (Q1)

Oral scientific presentations:

- | | |
|------------|--|
| 19-10-2023 | <i>Antitumor hatású protoflavon-indol hibrid vegyületek előállítás és vizsgálata</i>
XLVI. Kémiai Előadói Napok (KEN)
Szeged, Hungary, 17-19 October 2023 |
| 02-07-2023 | <i>Preparation and antitumor investigation of new nature-inspired estradiol-protoflavone hybrids</i>
71st International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA)
Dublin, Ireland, 2-5 July 2023 |
| 23-05-2023 | <i>Antioxidant and pharmacokinetic studies on new semi-synthetic nitrogen containing diarylheptanoids derived from curcumin</i>
4th Symposium of Young Researchers on Pharmacognosy
Szeged, Hungary, 22-24 May 2023 |
| 04-02-2022 | <i>Structural modification of hydrocurcumins in the aim of increased antioxidant activity</i>
3rd Symposium of Young Researchers on Pharmacognosy
Szeged, Hungary, 3-4 February 2022 |
| 04-02-2021 | <i>Study on peroxy-nitrite-induced oxidation of hydrocurcumins</i>
2nd Symposium of Young Researchers on Pharmacognosy
Szeged, Hungary, 4 February 2021 |
| 25-11-2019 | <i>Chemical studies on curcumin metabolites</i>
1st Symposium of Young Researchers on Pharmacognosy
Szeged, Hungary, 21-25 November 2019 |

Scientific posters:

MB Háznagy, M Vágvölgyi, **G Girst**, SR Krishnan, K Cholke, J Gertsch, A Hunyadi: *Natural and Semisynthetic Ecdysteroids: Design and Optimisation toward Trypanocidal Activity*

Advancing Tradition and Innovation: Challenges, Opportunities, and Prospects in Chinese Medicine and Natural Products; Taichung City, Taiwan, 24-26 October, 2025.

G Girst, B Szűcs, S Bartha, BA Tayeb, I Zupkó, R Minorics, A Hunyadi: *New, semisynthetic pyrazole ring containing hydrocurcumin derivatives as potential antitumor agents*

International Congress On Natural Products Research; Kraków, Poland, 13-17 July, 2024.

RJF Ferreira, EA Lopes, **G Girst**, LM Gonçalves, HC Wang, A Hunyadi, MMM Santos: *Indole derivatives and protoflavones hybrid molecules to tackle triple-negative breast cancer*

III Bio.Natural Bioactive Natural Products Research Meeting; Lisbon, Portugal, 13-14 July, 2023

SHH Ahmed, T Gonda, O Agbadua, **G Girst**, R Berkecz, N Kúsz, MC Tsai, CC Wu, GT Balogh, A Hunyadi: *6-Gingerol Derivatives as Promising Antiplatelet Leads*
70th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA); Thessaloniki, Greece, 28-31 August, 2022

G Girst, V Barcherini, LM Gonçalves, L Saraiva, MMM Santos, A Hunyadi: *New protoflavone hybrids overcome cancer resistance connected to mutant p53*

5th Grant Period Annual Conference of Cost Action 17104, New diagnostic and therapeutic tools against multidrug resistant tumors (STRATAGEM); Coimbra, Portugal, 29 June - 1 July, 2022

B Juhász, Cs Vágvölgyi, **G Girst**, A Hunyadi, M Vágvölgyi, M Vörös: *Investigation of the antimicrobial effects of protoflavonoid compounds*

6th Central European Forum for Microbiology in the 70th Anniversary of the Foundation of HSM (CEFORM); Kecskemét, Hungary, 13-15 October, 2021

G Girst, EA Lopes, M Espadinha, LM Gonçalves, MMM Santos, A Hunyadi: *Protoflavone – spirooxindole hybrids exhibit promising, increased antitumor activity*

69th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA); Bonn, Germany, 5-8 September, 2021

B Benešová, V Heger, J Viskupičová J, **G Girst**, SB Ötvös, A Hunyadi, L Horáková: *Modification of SERCA activity and viability of pancreatic INS-1E beta cells by curcumin derivatives*

2nd International Conference on Traditional Medicine, Phytochemistry and Medicinal Plants (TMedPM-2019); Berlin, Germany, 30 September - 2 October, 2019

G Girst, GT Balogh, F Fülöp, SB Ötvös, A Hunyadi: *Pharmacokinetic investigation of hydrogenated natural curcumin metabolites*

67th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA); Innsburg, Austria, 1-5 September, 2019

M Vágvölgyi, **G Girst**, ZP Zomborszki, F Fülöp, SB Ötvös and A Hunyadi: *Preparation of B ring saturated protoflavone analogs as novel non-toxic xanthine oxidase inhibitors*

3rd Training School, La Laguna , Tenerife, Spain, 10-12 December, 2018

M Vágvölgyi, **G Girst**, ZP Zomborszki, F Fülöp, SB Ötvös, A Hunyadi: *Preparation of B-ring saturated nontoxic protoflavones as novel xanthine oxidase inhibitors*

66th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA); Shanghai, China, 26-29 August, 2018

M Vágvölgyi, **G Girst**, ZP Zomborszki, F Fülöp, SB Ötvös, A Hunyadi: *Nontoxic protoflavone derivatives as potential inhibitors of xanthine oxidase*

Young Scientists' Meeting on Advances in Phytochemical Analysis, Liverpool, United Kingdom, 2-5 July, 2018

International experience:

7-10 September 2021

Cooperation on innovation and exchange of good practice in the hypoglycemia diet for people with diabetes (ERASMUS K2, project nr. 2019-1-RO01-KA203-063499)

Banat University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", Timisoara, Romania

July 2021

Bilateral Hungarian-Portuguese science and technology cooperation (2018-2.1.15-TÉT-PT-2018-00016)

Host: Maria MM Santos (Medicinal Organic Chemistry Group, Research Institute for Medicines , Faculty of Pharmacy)

Universidade de Lisboa, Lisbon, Portugal

Other knowledge:

2021	Covid sampling
2019	Spanish basic C-type language exam (B1 level)
2016	Driving license (Type B)
2013	English intermediate C-type TELC language exam (B2 level)