CURRICULUM VITAE

PERSONAL DATA

Name	Titanilla Dankó
Place of birth	Budapest
Date of birth	24. 06. 1989.
E-mail	tita.danko@gmail.com; danko.titanilla@med.semmelweis-univ.hu

EDUCATION

2018-	Doctoral School of Pathological Sciences, Semmelweis University – Experimental Oncology Program supervisor: Anna Sebestyén Ph.D.
2016-2018	Institute of Biology, Faculty of Sciences, Eötvös Loránd University Biology MSc – specialization: Molecular Genetics, Cell- and Developmental Biology
2013-2016	Institute of Biology, Faculty of Sciences, Eötvös Loránd University Biology BSc

LANGUAGES

English (intermediate, B2)
Latin (intermediate, B2)

RESEARCH EXPERIENCE AS A TDK STUDENT

RESEARCH INSTITUTE
Department of Pathology and Experimental Cancer Research, Faculty of Medicine, Semmelweis University – Tumor Biology Lab

SUPERVISOR
Anna Sebestyén, Ph.D.

RESEARCH TOPICS
Investigation of metabolic alterations and the presence of the oncometabolite 2-hydroxyglutarate in tumor cells

Studying the antiproliferative and metabolic effects of rapamycin on isocitrate dehydrogenase-mutant tumor cells

Studying the bioenergetics and proliferation influencing effects of different oncopharmacological compounds on human tumor cell lines *in vitro*

CONFERENCE ATTENDANCE AND AWARDS

2018	Semmelweis University TDK Conference; session: Cell biology, cell physiology
2017	XXXIII. OTDK Conference – session: Biology, Molecular cell biology I. *special prize*
	XXXIII. OTDK Conference – session: Biology, Biochemistry
	Semmelweis University TDK Conference; session: Cell biology, cell physiology
2016	Eötvös Loránd University TDK Conference – session: Immune and medical biology *1st prize*
	Semmelweis University TDK Conference – session: Cell biology, cell physiology *2nd prize*
2015	Eötvös Loránd University TDK Conference – session: Immune and medical biology

SCHOLARSHIPS

2022	Stephen W. Kuffler Research Foundation Research Scholarship
2019	New National Excellence Program of the Ministry of Human Capacities (ÚNKP) Scholarship for PhD Students (2019/2020)
2019	ERASMUS+ Mobility of Staff in higher education – Staff mobility for teaching and training activities
2017	New National Excellence Program of the Ministry of Human Capacities (ÚNKP) Scholarship for Master Students (2017/2018)

TRAINEESHIPS

2019	University of Salford, Biomedical Research Centre, Salford, United Kingdom
2018	Technische Universität Dresden, Centre for Translational Bone, Joint And Soft Tissue Research, Dresden, Germany

WORK EXPERIENCE

2016-	Department of Pathology and Experimental Cancer Research, Faculty of Medicine, Semmelweis University Cell Culturing Lab lab assistant
2014	Department of Biophysics and Radiation Biology, Faculty of Medicine, Semmelweis University Nanochemistry Group research assistant
2013-2014	Department of Surgical Research and Techniques Faculty of Medicine, Semmelweis University research assistant

MEMBERSHIPS

Hungarian Cancer Society, European Association of Cancer Research

RESEARCH INTEREST

My research interest and work are related to the *in vitro* cultures of human cells and tissues, as well as the development of tumor biology models. Within tumor biology, my main area of interest is the study of cellular metabolic alterations in tumor cells.

Using a variety of 3D culturing methods and 3D bioprinting technique, we establish and apply such models that, according to our current results, are closer to the *in vivo* conditions than the traditional 2D cell culturing methods.

In our studies, I have the possibility to work with different types of tumor cell lines including gliomas, colon, breast, lung and renal carcinomas. Beside I participate in the investigations on determining the optimal conditions of 3D-cultured cell lines, I perform comparative metabolic measurements and expression analyzes, respectively. I also study the metabolic alterations of tumor cells associated with dysregulated signaling and mTOR kinase activity characteristic for malignant cells, as well as their role in tumor tissue changes, the environmental adaptation, survival mechanisms of tumor cells, and the developing therapy resistance.

PUBLICATIONS

Zsigrai S, Kalmár A, Barták BK, Nagy ZB, Szigeti KA, Valcz G, Kothalawala W, Dankó T, Sebestyén A, Barna G, Pipek O, Csabai I, Tulassay Z, Igaz P, Takács I, Molnár B. Folic Acid Treatment Directly Influences the Genetic and Epigenetic Regulation along with the Associated Cellular Maintenance Processes of HT-29 and SW480 Colorectal Cancer Cell Lines. Cancers (Basel). 2022 Apr 3;14(7):1820. doi: 10.3390/cancers14071820. PMID: 35406592.

Sebestyén A, Dankó T, Sztankovics D, Moldvai D, Raffay R, Cervi C, Krencz I, Zsiros V, Jeney A, Petővári G. The role of metabolic ecosystem in cancer progression - metabolic plasticity and mTOR hyperactivity in tumor tissues. Cancer Metastasis Rev. 2021 Dec;40(4):989-1033. doi: 10.1007/s10555-021-10006-2. Epub 2022 Jan 14. PMID: 35029792; PMCID: PMC8825419.

Krencz I, Sztankovics D, Danko T, Sebestyen A, Khoor A. Progression and metastasis of small cell lung carcinoma: the role of the PI3K/Akt/mTOR pathway and metabolic alterations. Cancer Metastasis Rev. 2021 Dec;40(4):1141-1157. doi: 10.1007/s10555-021-10012-4. Epub 2021 Dec 27. PMID: 34958428; PMCID: PMC8825381.

A. Sebestyén, G. Petővári, T. Dankó, D. Sztankovics, E. Vetlényi, A. Khoor, A. Jeney, I. Krencz, and J. Pápay, "A tumorszövet metabolikus heterogenitása - anyagcsere-változások vizsgálati lehetőségei és jelentősége a daganatbiológiában," ORVOSKÉPZÉS, vol. 96, no. 3, pp. 479–493, 2021.

Dankó T, Petővári G, Sztankovics D, Moldvai D, Raffay R, Lőrincz P, Visnovitz T, Zsiros V, Barna G, Márk Á, Krencz I, Sebestyén A. Rapamycin Plus Doxycycline Combination Affects Growth Arrest and Selective Autophagy-Dependent Cell Death in Breast Cancer Cells. Int J Mol Sci. 2021 Jul 27;22(15):8019. doi: 10.3390/ijms22158019. PMID: 34360785; PMCID: PMC8347279.

Forika G, Kiss E, Petovari G, Danko T, Gellert AB, Krenacs T. Modulated Electro-Hyperthermia Supports the Effect of Gemcitabine Both in Sensitive and Resistant Pancreas Adenocarcinoma Cell Lines. Pathol Oncol Res. 2021 Dec 10;27:1610048. doi: 10.3389/pore.2021.1610048. PMID: 34955688; PMCID: PMC8702438.

Sebestyén A, Kopper L, Dankó T, Tímár J. Hypoxia Signaling in Cancer: From Basics to Clinical Practice. Pathol Oncol Res. 2021 May 3;27:1609802. doi: 10.3389/pore.2021.1609802. PMID: 34257622; PMCID: PMC8262153.

Sebestyén A, Dankó T. A sejttenyésztés alapjai, lehetőségei és kihívásai In: Krenács, Tibor; Bödör, Csaba; Matolcsy, András (szerk.) Patológiai és molekuláris onkodiagnosztikai módszerek : Kézikönyv patológusoknak, kutatóknak, analitikusoknak, asszisztenseknek és a társszakmák képviselőinek. Budapest, Magyarország : Medicina Könyvkiadó Zrt., (2021) pp. 253-263. , 11 p

Felkai L, Krencz I, Kiss DJ, Nagy N, Petővári G, Dankó T, Micsík T, Khoor A, Tornóczky T, Sápi Z, Sebestyén A, Csóka M. Characterization of mTOR Activity and Metabolic Profile in Pediatric Rhabdomyosarcoma. Cancers (Basel). 2020 Jul 17;12(7):1947. doi: 10.3390/cancers12071947. PMID: 32709151; PMCID: PMC7409076.

Galamb O, Kalmár A, Sebestyén A, Dankó T, Kriston C, Fűri I, Hollósi P, Csabai I, Wichmann B, Krenács T, Barták BK, Nagy ZB, Zsigrai S, Barna G, Tulassay Z, Igaz P, Molnár B. Promoter Hypomethylation and Increased Expression of the Long Non-coding RNA LINC00152 Support Colorectal Carcinogenesis. Pathol Oncol Res. 2020 Oct;26(4):2209-2223. doi: 10.1007/s12253-020-00800-8. Epub 2020 Apr 20. PMID: 32307642; PMCID: PMC7471146.

Petővári G, Dankó T, Tőkés AM, Vetlényi E, Krencz I, Raffay R, Hajdu M, Sztankovics D, Németh K, Vellai-Takács K, Jeney A, Kulka J, Sebestyén A. In Situ Metabolic Characterisation of Breast Cancer and Its Potential Impact on Therapy. Cancers (Basel). 2020 Sep 3;12(9):2492. doi: 10.3390/cancers12092492. PMID: 32899149; PMCID: PMC7563878.

Petővári G, Dankó T, Krencz I, Hujber Z, Rajnai H, Vetlényi E, Raffay R, Pápay J, Jeney A, Sebestyén A. Inhibition of Metabolic Shift can Decrease Therapy Resistance in Human High-Grade Glioma Cells. Pathol Oncol Res. 2020 Jan;26(1):23-33. doi: 10.1007/s12253-019-00677-2. Epub 2019 Jun 11. PMID: 31187466; PMCID: PMC7109188.

Zsigrai S, Kalmár A, Nagy ZB, Barták BK, Valcz G, Szigeti KA, Galamb O, Dankó T, Sebestyén A, Barna G, Szabó V, Pipek O, Medgyes-Horváth A, Csabai I, Tulassay Z, Igaz P, Takács I, Molnár B. S-Adenosylmethionine Treatment of Colorectal Cancer Cell Lines Alters DNA Methylation, DNA Repair and Tumor Progression-Related Gene Expression. Cells. 2020 Aug 9;9(8):1864. doi: 10.3390/cells9081864. PMID: 32784836; PMCID: PMC7464653.

Horváth Z, Reszegi A, Szilák L, Dankó T, Kovalszky I, Baghy K. Tumor-specific inhibitory action of decorin on different hepatoma cell lines. Cell Signal. 2019 Oct;62:109354. doi: 10.1016/j.cellsig.2019.109354. Epub 2019 Jul 2. PMID: 31271881.

Sticz T, Molnár A, Dankó T, Hujber Z, Petővári G, Nagy N, Végső G, Kopper L, Sebestyén A. The Effects of Different mTOR Inhibitors in EGFR Inhibitor Resistant Colon Carcinoma Cells. Pathol Oncol Res. 2019 Oct;25(4):1379-1386. doi: 10.1007/s12253-018-0434-4. Epub 2018 Jun 7. PMID: 29882195.

Hujber Z, Horváth G, Petővári G, Krencz I, Dankó T, Mészáros K, Rajnai H, Szoboszlai N, Leenders WPJ, Jeney A, Tretter L, Sebestyén A. GABA, glutamine, glutamate oxidation and succinic semialdehyde dehydrogenase expression in human gliomas. J Exp Clin Cancer Res. 2018 Nov 7;37(1):271. doi: 10.1186/s13046-018-0946-5. PMID: 30404651; PMCID: PMC6223071.

Petővári G, Hujber Z, Krencz I, Dankó T, Nagy N, Tóth F, Raffay R, Mészáros K, Rajnai H, Vetlényi E, Takács-Vellai K, Jeney A, Sebestyén A. Targeting cellular metabolism using rapamycin and/or doxycycline enhances anti-tumour effects in human glioma cells. Cancer Cell Int. 2018 Dec 19;18:211. doi: 10.1186/s12935-018-0710-0. PMID: 30574020; PMCID: PMC6300020.

Hujber Z, Petővári G, Szoboszlai N, Dankó T, Nagy N, Kriston C, Krencz I, Paku S, Ozohanics O, Drahos L, Jeney A, Sebestyén A. Rapamycin (mTORC1 inhibitor) reduces the production of lactate and 2-hydroxyglutarate oncometabolites in IDH1 mutant fibrosarcoma cells. J Exp Clin Cancer Res. 2017 Jun 2;36(1):74. doi: 10.1186/s13046-017-0544-y. PMID: 28578659; PMCID: PMC5457553.

Ferencz A, Feher, D, Szabó G, Dankó T, Juhos K, Szentes P, Csukás D, Sándor J, Ender F, Fónyad L, Molnár K, Jedlovszky-Hajdú A, Zrínyi M, Weber, G. Abdominal Hernia Repair With Poly(Succinimide) And With Its Cysteamine Crosslinked Nanofiber Hernia Meshes. A Preliminary Experimental Study. International Journal Of Bio-Technology And Research (IJBTR). (2016). 6. 1-6.

Nagy N, Hajdu M, Márk Á, Király PA, Tóth M, Dankó T, Csóka M, Sebestyén A. Growth inhibitory effect of rapamycin in Hodgkin-lymphoma cell lines characterized by constitutive NOTCH1 activation. Tumour Biol. 2016 Oct;37(10):13695-13704. doi: 10.1007/s13277-016-5272-y. Epub 2016 Jul 29. PMID: 27473087.

Nemes K, Csóka M, Nagy N, Márk Á, Váradi Z, Dankó T, Kovács G, Kopper L, Sebestyén A. Expression of certain leukemia/lymphoma related microRNAs and its correlation with prognosis in childhood acute lymphoblastic leukemia. Pathol Oncol Res. 2015 Jul;21(3):597-604. doi: 10.1007/s12253-014-9861-z. Epub 2014 Nov 12. PMID: 25388103.

SCIENTIFIC CONFERENCE ATTENDANCE

ORAL PRESENTATIONS

Titanilla Dankó, Ildikó Krencz, Enikő Vetlényi, Dorottya Moldvai, Gábor Petővári, Gyula Végső, Judit Pápay, Anna Sebestyén; Tacrolimus Enhanced mTORC1/2 Activity And Its Potential

Importance In Post Transplant Renal Cell Carcinoma; Hungarian Society for Immunology, 48th Congess; Bükfürdő, 16-18. October, 2019.

Dankó Titanilla, Petővári Gábor, Krencz Ildikó, Hujber Zoltán, Raffay Regina, Tóth Fanni, Jeney András, Sebestyén Anna; Metabolikus támadáspontú kezelések potenciális daganatnövekedést gátló hatásai *in vitro*; 4-6. October, 2018.

Dankó Titanilla Onkometabolit termelést és tumornövekedést gátló hatások *in vitro* vizsgálata eltérő citosztatikus és citotoxikus érzékenységet mutató sejtekben ELTE ÚNKP Conference; Budapest, 24. May, 2018.

Tóth Fanni, Dankó Titanilla; Humán gliomák izocitrát-dehidrogenáz (IDH) enzim mutáció függő bioenergetikai jellegzetességei mint lehetséges terápiás célpontok; TDK Conference at Semmelweis University – session: Cell biology, cell physiology; Budapest, 8. February, 2018.

Dankó Titanilla; Anyagcsere változások és 2-hidroxiglutarát onkometabolit jelenlétének vizsgálata tumorsejtekben; XXXIII. OTDK Conference – session: Biology, Molecular cell biology I.; Debrecen, 10. April, 2017.

Dankó Titanilla; Rapamycin kezelés növekedés gátló és metabolikus hatása izocitrát-dehidrogenáz (IDH) mutáns tumorsejtekben; XXXIII. OTDK Conference – session: Biology, Biochemistry; Debrecen, 10. April, 2017.

Dankó Titanilla; mTOR gátló rapamycin anti-proliferatív és metabolikus hatásai izocitrát-dehidrogenáz (IDH) mutáns daganatsejtekben; TDK Conference at Semmelweis University – session: Cell biology, cell physiology; Budapest, 8. February, 2017.

Dankó Titanilla; Rapamycin kezelés növekedés gátló és metabolikus hatása izocitrát dehidrogenáz (IDH) mutáns tumorsejtekben; TDK Conference at Faculty of Sciences, Eötvös Loránd University; Budapest, 26. November, 2016.

Dankó Titanilla; Anyagcsere változások és a 2-hidroxiglutarát mennyiségének vizsgálata daganatsejtekben; TDK Conference at Semmelweis University – session: Cell biology, cell physiology; Budapest, 11. February, 2016.

POSTER PRESENTATIONS

Titanilla Dankó, Gábor Petővári, Dániel Sztankovics, Dorottya Moldvai, Regina Raffay, Patrícia Kóczán, Péter Lőrincz, Tamás Visnovitz, Viktória Zsiros, Gábor Barna, Ágnes Márk, Ildikó Krencz, Anna Sebestyén; Autophagy-induction Derived Non-apoptotic Cell Death in Human Breast Cancer Cell Lines; Semmelweis University PhD Scientific Days 7-8. July 2021.

T Dankó, G Petővári, R Raffay, E Vetlényi, I Krencz, D Sztankovics, K Mészáros, H Sántha, A Sebestyén; Metabolic plasticity alters the aggressiveness and drug response of human breast cancer cells in different cell culturing systems; Semmelweis University PhD Scientific Days 30-31. August 2020.

Budapest, 13. 04. 2022. Titanilla Dankó