**CURRICULUM VITAE**

**Personal Information**

First Name: Martina

Last Name: Poturnajova

Professional Title/Position: Independent researcher 2a

Highest Degree: PhD in Biochemistry

**Affiliation:**

Department/Division: Laboratory of Molecular Oncology

Institute: Cancer Research Institute, Biomedical Research Center, Slovak Academy of Sciences

Bratislava, Slovakia, EU

**Educational Qualifications:**

• Ph.D.: Slovak Technical University, Faculty of Chemical and Food Technology, Department of Biochemistry and Microbiology, Bratislava, Slovakia, 2004, PhD study of Biochemistry and Molecular Biology, the title of the thesis: “Molecular biological diagnostic of hereditary predisposition to Multiple endocrine neoplasia type 2”.

• M.Sc.: Slovak Technical University, Faculty of Chemical and Food Technology, Department of Biochemistry and Microbiology, Bratislava, Slovakia, 2000, Biochemistry

**Professional Experience:**

2022 – (Starting) Verification of clinically relevant biomarkers for the stratification of CRC patients.

2019-2022 ALDH isoforms as markers overlapping chemoresistance and metastatic potential in colorectal cancer and their clinical relevance, preparation of CRISPR-Cas9 ALDH1A3 knockouts and their functional analysis in vitro and in vivo.

2016-2018 Molecular and cell biology of metastatic colorectal carcinoma. Markers linked to the metastasis and their pharmacological and genetic inhibition.

2011 Genetic and population analysis of novel RET gene mutation in two villages with high occurrence of thyroid neoplasia

2008-2011 Analysis of transforming properties of novel dual mutation of RET gene found in Slovakia, either alone or with co- localization with well-known and strongly pathogenic mutation. Functional analysis of self-association activity of RET transmembrane domain caused by the mutation/s in comparison to wild-type sequence.

2000-2011 Molecular genetic diagnostics of inherited mutations of RET oncogene and their association to MEN2 syndrome type 2.

**Methodological skills:**

genetics, the biology of tumor cells, genetic engineering, RNA expression analyses, protein analyses, tissue culture techniques and *in vitro* analysis, moreover in the establishment of patient primocultures and organoids.

**Academic Achievements / Publications:**

H-index (WOS): 8, Publications: 18. ORCID: 0000-0002-3174-290X

Selected peer-reviewed publications:

POTURNAJOVÁ, M. - Matuskova M. New Aspects in the Mechanism of Action of ALDH1A1 and 1A3 Isoforms in Carcinogenesis. J Cellullar Signalling 2022;3 (3):153-159.

POTURNAJOVÁ, M. – Furielova T – Balintova S. – Schmidtova S- Kučerová, Lucia - Matuskova M. Molecular features and gene expression signature of metastatic colorectal cancer. In Oncology Reports, 2021, vol. 45, no. 4, art. no. 10. IF: 3.67

POTURNAJOVÁ, M. – Kozovska Z - Matuskova M. Aldehyde dehydrogenase 1A1 and 1A3 isoforms – mechanism of activation and regulation in cancer. In Cellular Signalling, 2021, vol. 87, no. 11, art. no. 110120. IF: 4.315

Durinikova E. – Kozovska Z - POTURNAJOVÁ, M – Plava J – Cierna Z – Babelova A – et al. ALDH1A3 upregulation and spontaneous metastasis formation is associated with acquired chemoresistance in colorectal cancer cells. In BMC Cancer, 2018, vol. 18, no. 1, p. 848. IF: 3.288

Kucerova L – Durinkova E - Toro L – Cihova M – Miklikova S - POTURNAJOVÁ, M – Kozovska Z - Matuskova M. Targeted antitumor therapy mediated by prodrug-activating mesenchymal stromal cells. In Cancer Letters, 2017, vol. 408, p. 1-9. IF: 6.375

Kucerova L - Feketeova L - Kozovska Z - POTURNAJOVA M - Matuskova M - Nencka R - Babal P. 2014. In vivo 5FU-exposed human medullary thyroid carcinoma cells contain a chemoresistant CD133+ tumor-initiating cell subset. Thyroid. 3, 520-532. IF: 4.493

Takacova M - Bullova P - Simko V - Skvarkova L - POTURNAJOVA M - Feketeova L - Babal P - Kivela AJ - Kuopio T - Kopacek J - Pastorek J -Parkkila S -Pastorekova S. 2014. Expression pattern of carbonic anhydrase IX in Medullary thyroid carcinoma supports a role for RET-mediated activation of the HIF pathway. Am J Pathol. 2014 Apr;184(4):953-65. IF 4.591

Kucerova, L - Feketeova, L- Matuskova, M - Kozovska Z - Janega P - Babal P - POTURNAJOVA M. 2013. Local bystander effect induces dormancy in human medullary thyroid carcinoma model in vivo. Cancer Lett. Volume:28, 335, 299-305. IF: 4.238

Benej M - Fekecsova S - POTURNAJOVA M. 2013. Assessing the effect of RET transmembrane domain mutations in receptor self-association capability using the in vivo TOXCAT system. Neoplasma. 2013;60(1):111-20. IF 1.642

Kucerova L - POTURNAJOVA M - Tyciakova S - Matuskova M. 2012. Increased proliferation and chemosensitivity of human mesenchymal stromal cells expressing fusion yeast cytosine deaminase. Stem Cell Res. 2012 Mar;8(2):247-58. IF 4.467

**Actual projects:**

PI of national projects:

A4L\_ACTIONS 012722 (Horizon 2020) - Characterisation of CRC patient-derived xenolines and its ALDH1A1 knockouts. (2022-2023)

VEGA 2/0170/22 LEONORA - Searching for and verification of clinically relevant biomarkers for the stratification of CRC patients by molecular and bioinformatic methods. (2022-2025)

Partner in projects:

APVV-21-0296 Identification of new biomarkers associated with metastatic colorectal relapse carcinoma after metastasectomy (2022-2025)

Ministry of health SR 2019/60-BMCSAV-4 -CAScADE - Markers overlapping chemoresistance and metastatic potential in colorectal cancer - alhedyde dehydrogenase and its clinical relevance. (2019-2022)

VEGA 2/0124/17 The role of ALDH1 in chemoresistance of cancer cells. (2017-2020)

ERANET-INNOCENT Innovative nanodrugs: A new combination of epigenetic and anticancer drugs with gene therapy targeted to breast cancer tumor stem cells. (2017-2020)

**Previous projects:**

PI of national projects:

VEGA 2/0128/17 Cellular and molecular traits of human metastasis-initiating cells at different stages of metastasis development. (2017-2020)

VEGA 2/5077/27 Mutations of RET proto-oncogene connected with thyroid carcinomas. (2004-2007)

VEGA 2/0091/08 Biological effect of novel mutation of the RET gene associated with multiple endocrine neoplasia type 2 (2008-2011)

The Ján Korec Foundation. Population genetic analysis of inhabitants of two villages with high incidence of thyroid cancer. (2011)

VEGA 2/0128/17 Cellular and molecular traits of human metastasis-initiating cells at different stages of metastasis development. (2017-2020)

Partner in projects:

VEGA 2/0171/13: Cytotoxic Effect of Engineered Mesenchymal Stromal Cells on Human Chemoresistant Tumour Cells and Cancer Stem Cells. (2013-2016)

APVV-0230-11: Targeted augmented cellular therapy against tumour initiating chemoresistant cells. (2011-2014)