

Novel Drug Discovery Approaches For Cancer Metabolism: Beyond Warburg Effect

Mustafa GÜZEL, Ph.D.

2017-Present Associate Professor @ İstanbul Medipol University, International School of Medicine, Department of Molecular Medicine and Biotechnology (Chair), İstanbul, TURKEY

2014-2017-Assistant Professor @ İstanbul Medipol University, International School of Medicine, Department of Medical Pharmacology (Chair), İstanbul, TURKEY

2001-2014-Lab Manager and Senior Investigator-TransTech Pharma Inc. Medicinal Chemistry Laboratories, High Point, NC

2000-Research Scientist-ArQule Inc., Synthetic Chemistry Laboratories, Woburn, MA

1997-2000-Research Assistant-Bioorganic and Medicinal Chemistry Laboratories, Department of Chemistry, Northeastern University, Boston, MA

1994-96-Teaching Assistant-Molecular Structure Facility, Department of Chemistry, Clemson University, Clemson, SC





Education & Experience

Dr. Guzel graduated from Hacettepe University School of Engineering with a Bachelor of Science in Chemistry in 1987 and completed his Masters of Science and PhD in Medicinal Chemistry at Clemson University in the United States in 1996 and 2000 respectively.

Dr. Guzel has over 25 years of Medicinal Chemistry experience with increasing responsibilities most notably as Senior Research Investigator at vTv Therapeutics, in High Point, NC where he developed leading drug candidates for treatment of Cancer, Diabetes, and Alzheimer's Disease. Currently, Dr. Guzel serves as Associate Professor in Pharmacology at the International School of Medicine of Istanbul Medipol University where he leads the laboratory of Molecular Discovery and Development group.

RESEARCH INTERESTS

Research and development in medicinal chemistry specifically cancer/cancer metabolism and kinase inhibitors, GPCRs for the treatment of diabetic disorders (NIDDM), obesity, CNS and neurodegenerative disorders (ALS, Alzheimer's and Parkinson's disease), and inflammatory disorders (COPD, RA).

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- **M. Sc. and Ph. D. Degrees Medicinal Chemistry**
 - **Clemson University, Clemson, SC in 1996 and 2000**
- **ArQule Inc. Sr. Synthetic Organic Chemist**
- **TransTech Pharma Inc. in High Point, NC 2001-2014**
 - **Managerial Positions, Medicinal Chemistry**
- **Currently holds ~ 68 patents for treatment of cancer, diabetes, COPD, RA, Oxidative Stress, Microbial treatment, and obesity**
 - **50+ publications in peer reviewed journals, presentations and posters**
- **Faculty position at International School of Medicine**
 - **Department of Medical Pharmacology at Istanbul Medipol University**
- **Department Head at Division of Molecular Discovery**

RESEARCH INTERESTS: Research and development in medicinal chemistry specifically cancer/cancer metabolism and kinase inhibitors, GPCRs for the treatment of diabetic disorders (NIDDM), obesity, CNS and neurodegenerative disorders (ALS), Alzheimer's and Parkinson's disease), and inflammatory disorders (COPD, RA).

Contributed on design, synthesis, discovery and development of the following drug candidates which are currently on clinical trials:

- ❑ *TTP488 (RAGE Inhibitor) currently on Phase III studies for Alzheimer's Disease (granted and designated as fast track drug by FDA)*
 - ❑ *TTP854 (BACE Inhibitor) currently on Phase I studies for Alzheimer's Disease*
 - ❑ *TTP607 (AK Inhibitor) currently on Phase I studies for cancer*
 - ❑ *TTP737 (PDE-4D Inhibitor) currently on Phase I studies for inflammation*
 - ❑ *TTP399 (GK Activator) currently on Phase III studies for diabetes*
 - ❑ *TTP547 (GK Activator) currently on Phase IIB studies for diabetes*
 - ❑ *TTP054 (GLP-1R Activator) currently on Phase II studies for diabetes*
 - ❑ *TTP593 (GLP-1R Activator) currently on Phase II studies for diabetes*
 - ❑ *TTP404 (AGRP Inhibitor) currently on Phase I studies for obesity*
 - ❑ *TTP971 (HMOX-1 Activator) currently on Phase I studies for oxidative stress and inflammation*
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- ❑ *TTP253 (HK-2 Inhibitor) currently on pre-clinical studies for cancer*
 - ❑ *TTP886 (HK-2 Inhibitor) currently on pre-clinical studies for cancer*

→ Currently holding 66 patents (USPTO/ EPO/WIPO) and 30 publications

→ Cancer and Cancer Metabolism Project (Hexokinase-2 Inhibitors, currently on Pre-clinical stages, licensed in 2015 to CALITERA & vTv Therapeutics for total of \$30 Mln *IN MILESTONES!

Guzel Research Group Active Projects:

1. Synthesis and Biological Activities of Novel Adenosine Antagonists (A_{2A}) for the Treatment of Parkinson's Disease)-2232
2. Investigation of Novel Metabolic Targets for Cancer Therapy-BAP
3. Novel Drug Discovery and Development Inspired by a Natural Product as Anti-Cancer Agents: Modification of Methyl Jasmonate and Structure Activity Relationship of New Molecules-COST-1001
4. Synthesis of Novel BNIP Derivatives and Drug Delivery Systems: A multidisciplinary *in vitro* Study for Treatment of Leishmaniasis-COST-Europe
5. Development of novel therapeutic molecules with capability of targeting multiple receptors for treatment of Parkinson Disease-COST-Europe
6. The Effect of Ghrelin Hormone Inhibition in Obesity and Metabolic Disorders-BAP
7. Design and Synthesis of Novel Compounds for PKLR for the Treatment of NAFLD-ScandiEdge Therapeutics (Sweden)
8. Design, Synthesis and Biological Activity of Novel CAPE Analogs for the Treatment of GBM- 1002
9. Effects of Boron-containing Sodium Butyrate Derivatives In Combination With HDAC Inhibitors on Caco-2 And MDB Cell Lines-1002