Timea **Polgar**

EMAIL: timea.polgar@gmail.com

PROFILE

Molecular biologist (MSc) & Computational chemist (MSc, PhD), science liaison, strategic business development and marketing specialist, 15 years in pharmaceutical R&D, biotech and scientific software development.

Development of a start-ups, managed software product development resulting in market leader products (pharmaceutical R&D), and external collaborations between large pharma and biotech/academia leading to drug candidates (oncology, diabetes, CNS).

Technical and scientific expertise in drug discovery, specialized in network pharmacology, ligand- and structure-based drug design, virtual screening, chemical and biopharmaceutical database management, genetics, high-content data analysis, data mining, patent searches, ontology.

Real team player and strategic thinker, self-motivated and passionate for problem solution and self-learning.

EDUCATION

PhD COMPUTATIONAL CHEMISTRY IN PHARMACEUTICAL SCIENCES, SUMMA CUM LAUDE
2003-2006, Chemical Engineering, Computational approaches at early phase drug discovery
Budapest University of Technology and Economics, Hungary

POSTGRADUATE TRAINING, MOLECULAR BIOLOGY
2000-2003, Genetics, Biochemistry
University of Szeged, Albert Szentgyörgyi Albert Medical School, Hungary

MSC IN CHEMISTRY - EXCELLENT
1998-2003, Chemistry, Computational approaches
University of Szeged, Hungary

MSC IN TRANSLATION - EXCELLENT
1999-2003, Chemical text translation, EN-HUN
University of Szeged, Hungary

MSC IN MOLECULAR BIOLOGY - EXCELLENT
1995-2000, Biology, Cell biology, Biochemistry
University of Szeged, Hungary

EMPLOYMENT HISTORY

CONSULTANCY&ENTREPRENEURSHIP, USA

Jan/2015 –

- Pre-clinical drug discovery approaches: scientific services
  - Genomic sciences: NGS
- Biotech Start-ups

MASS MEDIA DYNAMICS, USA
VP, International Business Development, Advisor Jan/2015 –

- Strategic business development of mobile health, Astrum social health project management
  - Scientific partner relationship management

SOLVO BIOTECHNOLOGY INC, HUNGARY
Business Development Manager March/2014 –Jan/2015

- Strategic business development of in vitro assays (ADMET):
  - international (USA, EU) product launches (human kidney, hepatocyte models)
  - portfolio management and development (business expansion, new opportunities & niche market)
  - partner relationship management
- Financial optimization
- Marketing
  - Product promotion, design, technical leaflets

MATERNITY LEAVE

CHEMAXON LTD, HUNGARY, CHEMINFORMATICS, SOFTWARE DEVELOPMENT, HUNGARY
Head of Application Science & Technical Sales, Business Development Manager Nov/2009 – Sep/2013

- Strategic business development:
  - product development strategy
  - partner relationship management worldwide
- Team building:
  - an international application scientist team (Europe, USA)
  - software developer team (20+ to 80-90+)
- Project management:
  - Establishment and launches of new product lines: biological registration and 3D visualization, large-scale 3D screening, clustering, naming (web-based)
- Sales support:
  - On-site visits and supports (pre-, post-sales), product demonstration (Europe, USA, Asia), end user technical support
- Marketing:
  - Organization of international user conferences, user trainings (Hungary, USA),
  - Product promotion (online, conferences, campaigns)
- Management of EU grant applications, RFPs, tenders
- Technical and scientific responsibilities: drug discovery software development (virtual screening, clustering), chemical graph searches, patent searches, chemical and biological databases, ontology, text mining

SERVIER INC, INSTITUTE DE RECHERCHÉ SERVIER PHARMACEUTICAL R&D, FRANCE
Senior Computational Chemist, Computational Biologist Feb/2008 – Nov/2009

- Management of pre-clinical computational studies (chemistry, biology) at a new research facility
- Design of R&D enterprise content database, research IT at a new site
- General project management of drug discovery projects (oncology, diabetes)
- Management of external international contracts
- Technical and scientific responsibilities: ligand- and structure-based design (QSAR, virtual screening), sequence analysis, large-scale data analysis, statistics, site-directed mutation analysis, molecular dynamics driven protein crystallography, biomarker analysis/selection

GEDEON RICHTER PLC, LEAD DISCOVERY UNIT, PHARMACEUTICAL R&D, HUNGARY
Senior Research Scientist Nov/2003 – Feb/2008

- Drug discovery computational studies, CADD, (CNS; D2/D3 partial agonist under approval)
- Leading pharmaceutical research collaborations
- Supervision and education of undergraduate/graduate students at partner University
- Technical and scientific responsibilities: ligand- and structure-based design, HTS data analysis, metabolic stability prediction, sequence analysis, network pharmacology, homology modelling

BIOLOGICAL RESEARCH CENTRE, HUNGARY & ROYAL HALLAMSHIRE HOSPITAL, UK
Research Assistant June/2000 – Nov/2003

- Studying MAPK pathways (2H, confocal microscopy, cloning, cell cultures (yeast, pro- and eukaryote))
- Sequencing, expression design, genomic screens, novel transcripts
- Bioinformatics: sequence analysis, screen evaluation, networks, GWAT

COMPUTER SKILLS AND COMPETENCES

- Windows, Linux based operational systems (administration level)
- State of the art modelling software: Schrödinger, Accelrys, ChemCompGroup, Certara
- State of the art informatics software: Accelrys, CambridgeSoft, Dotmatics, ChemAxon, TIBCO, R, Weka, SPSS, reverse engineering, GWAS, pathway analysis, Cytospace, Partek
- Programming&Scripting languages: awk, python, SQL, Matlab, C, JAVA
- Database management: Oracle, MySQL, other chemical, biological database
- CRM: salesforce, Microsoft Dynamics
- Agile software development

PUBLICATIONS

THESES

MSc Thesis, Biology (Cloning and expressing human TNF in E. coli.), 2000
MSc Thesis, Chemistry (Computer aided drug design-Molecular similarity study of fifteen phenylbutenones), 2003
PhD Thesis, Computational Chemistry, Role of the structure-based drug design in drug discovery, 2006

PEER REVIEWED JOURNALS AND BOOK CHAPTERS

1. **T. Polgar**, Gyula Tasi, Imre G. Csizmadia. Conformation analysis of substituted (E)-4-phenybut-3-en-2-ones. Journal of Molecular Structure: THEOCHEM, 666-667:131-134, 2003.
2. **T. Polgar**, Gyula Tasi, Imre G. Csizmadia. The Role of Chemistry in the Evolution of Molecular Medicine: 27-29 June 2003, Szeged, Hungary: a Tribute to Professor Albert Szent-Gyorgyi. Book, Elsevier Science Ltd. 2004/06.
3. Endre Kiss-Toth, Stephanie M. Bagstaff, H. Y. Sung, Veronika Jozsa, Clare Dempsey, Jim C. Caunt, Kevin M. Oxley, David H. Wyllie, **Timea Polgar**, Mary Harte, Luke A. J. O'Neill, Eva E. Qwarnstrom and Steven K. Dower. Human tribbles: a protein family controlling Mitogen Activated Protein Kinase Cascades, Journal of Biological Chemistry, 279:42703-42708, 2004.
4. **Tímea Polgár** and György M. Keserű. Virtual screening for β-secretase (BACE1) reveals the importance of protonation states at Asp32 and Asp228. Journal of Medicinal Chemistry, 48:3749-3755, 2005.
5. István Virág, **Tímea Polgár**, György M. Keserű. Functional Virtual Screening of Estrogen Receptor α Modulators by FlexX-Pharm. Journal of Molecular Structure: THEOCHEM, 725:239-242, 2005.
6. András Telekes, Endre Kiss-Tóth, Tünde Nagy, Eva E. Qwarnstrom, Erzsébet Kúsz, **Timea Polgár**, Ákos Resetár, Steven K. Dower, Erno Duda. Synergistic Effect of Avemar on Proinflammatory Cytokine Production and Ras-Mediated Cell Activation. Ann. N.Y. Acad. Sci., 1051:515-528, 2005.
7. **Tímea Polgár**, Andrea Baki, Györgyi I. Szendrei and György M. Keserű. Comparative Virtual and Experimental High-Throughput Screening for Glycogen Synthase Kinase-3b Inhibitors. Journal of Medicinal Chemistry, 48:7946-7959, 2005.
8. **Tímea Polgár** and György M. Keserű. Virtual Screening. Encyclopedia of Pharmaceutical Technology, 3E. 2005. Taylor&Francis, LLC.
9. Kiss-Toth E, Wyllie DH, Holland K, Marsden L, Jozsa V, Oxley KM, **Polgar T**, Qwarnstrom EE, Dower SK. Functional mapping of Toll/interleukin-1 signalling networks by expression cloning. Biochem Society Transactions; 33, 1405-1406, 2005.
10. Endre Kiss-Toth, David H. Wyllie, Karen Holland, Luke Marsden, Veronika Jozsa, Kevin M. Oxley, **Timea Polgar**, Eva E. Qwarnstrom and Steven K. Dower. Functional mapping and identification of novel regulators for the Toll/Interleukin-1 signalling network by transcription expression cloning. Cellular Signalling, 18, 202-214, 2006.
11. **Tímea Polgár**, György M. Keserű. Ensemble docking to flexible active sites. Critical evaluation of FlexE against JNK-3 and β-secretase. Journal of Chemical Information and Modeling, 46, 1795-1805, 2006.
12. **Tímea Polgár**, György M. Keserű. Structure-based virtual screening. Frontiers of Drug Design and Discovery. 3, 477-502, 2007.
13. **Tímea Polgár**, Dóra K. Menyhárd, György M. Keserű. Effective virtual screening protocol for CYP2C9 ligands using a screening site constructed from flubiprofen and S-warfarin pockets. Journal of Computer-Aided Molecular Design, 21, 539-548, 2007.
14. **Tímea Polgár**, Csaba Magyar, György M. Keserű. Impact of ligand protonation on virtual screening against β-secretase (BACE1). Journal of Chemical Information and Modeling, 47, 2366-2373, 2007.
15. **Tímea Polgár**, Szerkezet alapú virtuális szűrővizsgálatok a gyógyszerkutatás korai fázisában. Acta Pharmaceutica Hungarica, 77(4), 223-234, 2007.
16. **Tímea Polgár**, György M. Keserű, Virtual and Experimental High Throughput Screening on Kinase Targets, ICS-UNIDO book chapter. 2008.
17. Róbert Kiss, **Tímea Polgár**, Jacqueline Sayyah, Nicholas C. Figueroa, Alan F. List, Lubomir Sokol, Kenneth S. Zuckerman, Meghanath Gali, Kirpal S. Bisht, Peter P. Sayeski, and György M. Keserű. Identification of a Novel Inhibitor of JAK2 Tyrosine Kinase by Structure-Based Virtual Screening. Bioorganic & Medicinal Chemistry Letters, 19, 3598-3601, 2009.
18. Anurima Majumder, Andrew Magis, Róbert Kiss, **Tímea Polgár**, Robert W. Allan, György M. Keserű, Kirpal Bisht and Peter P. Sayeski, Structure-Function Correlation of G6, a Novel Small Molecule Inhibitor of Jak2: Indispensability of the Stilbene Ring. The FASEB journal. 2010.
20. Majumder A, Govindasamy L, Magis A, Kiss R, **Polgár T**, Baskin R, Allan RW, Agbandje-McKenna M, Reuther GW, Keseru GM, Bisht KS, Sayeski PP, Structure-function correlation of G6, a novel small molecule inhibitor of Jak2: indispensability of the stilbenoid core. Journal of Biological Chemistry. 285, 31399-407, 2010.

21. **Tímea Polgár** and György M. Keserű . Intergation of Virtual Screening and High-Throghput Screening. Combinatorial Chemistry & High Throughput Screening. 14(10), 889-97, 2011.
22. **Tímea Polgár** and György M. Keserű. Virtual Screening. Encyclopedia of Pharmaceutical Technology, 4E. 2011. Infarma, LLC.
23. Kirabo A, Embury J, Kiss R, **Polgár T**, Gali M, Majumder A, Bisht KS, Cogle CR, Keseru GM, Sayeski PP. The stilbenoid tyrosine kinase inhibitor, G6, suppresses Jak2-V617F-mediated human pathological cell growth in vitro and in vivo. Journal of Biological Chemistry. 286(6), 4280-4291, 2011.
24. Eszter Németh, Alexandra Kállai, **Tímea Polgár**, Gyula Tasi, Optimised van der Waals radii reproducing accurate molecular shape dimensions, 2009 submitted to Catalysis Communication
25. **Tímea Polgár** and György M. Keserű. Case studies in Small Molecule Hit and Lead Optimization for Proteases. Current Pharmaceutical design, book chapter, Benthams, 2013.
26. **Tímea Polgár** and György M. Keserű. Virtual Screening. Encyclopedia of Pharmaceutical Technology, 5E. 2013. Infarma, LLC.
27. Adrián Kalászi, Dániel Szisz, Gábor Imre, **Tímea Polgár**. Screen3D: a fully flexible novel shape-similarity method. Accepted, Journal of Chemical Information and Modeling, DOI: 10.1021/ci400620f, 2014.