

## Mohammed Toufiq

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## Recent Employment and Positions

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|---------------------|---|
| Oct 2022 – Present  | Bioinformatics Analyst I<br>The Jackson Laboratory for Genomic Medicine,<br>Farmington, Connecticut, USA  |
| Apr 2018 – Oct 2022 | Research Specialist – II (Bioinformatics) (Apr 2021–Oct 2022),<br>Research Specialist – I (Bioinformatics) (Apr 2018–Apr 2021),<br>Laboratory of Systems Immunology & Immunogenetics,<br>Division of Translational Medicine,<br>Sidra Medicine,<br>Doha, Qatar  |
| Nov 2013 – Apr 2018 | Associate QA Engineer - IV (Aug 2017–Apr 2018) &<br>Associate Application Specialist – IV (Dec 2016–Aug 2017) &<br>Associate Support Engineer – II (Apr 2015–Nov 2016) &<br>Scientist - I Support (Nov 2013–Mar 2015),<br>Software/Bioinformatics Department<br>Strand Life Sciences Pvt Ltd,<br>Bangalore, India |
| Jun 2013 – Oct 2013 | Research Project Associate (Bioinformatics)<br>Sir M Visvesvaraya Institute of Technology,<br>Bangalore, India  |

## Education

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|-------------|---|
| 2009 – 2013 | Bachelor of Engineering in Biotechnology<br>Sir M Visvesvaraya Institute of Technology,<br>Bangalore, India <u>affiliated to</u><br>Visvesvaraya Technological University, Belagavi, India.<br><u>Duration:</u> 4 years (8 semesters) |
| 2007 – 2009 | Physics, Chemistry, Mathematics, and Biology<br>St. Joseph's Indian Composite Pre-University College,<br>Bangalore, India.  |

## Research Awards

1. Outstanding Research Specialist, Best 2021 Publication – Junior Scientist Awarded for PMID:[34663591](#), and Best Poster Presentation Award at Sidra Research Day, Sidra Medicine, Doha, Qatar. 20 November 2021.
2. Travel Grant Award on conducting Collective Omics Data Training Workshop. Funded by Qatar National Research Fund to Principal Investigator: Dr. Damien Chaussabel (Investigator, Sidra Medicine, Qatar) [# QNRF-NPRP10-0205-170348]. A hands-on workshop held at Mahidol Oxford Tropical Medicine Research Unit (MORU), Bangkok, Thailand (~ 40 attendees) focused on the discovery of novel candidate genes implicated in the pathogenesis of sepsis. Public omics data were used as a source of training material for target selection and gene-centric reductionist investigations in-silico. The approach was described in a review paper (COD1 training module - PMID:[29705995](#)). 01-07 December 2018.

## Publications

### Peer-Reviewed Publications

<https://pubmed.ncbi.nlm.nih.gov/?term=Mohammed+Toufiq&sort=date&size=20>

1. Rinchai D, Deola S, Zoppoli G, Kabeer BSA, Taleb S, Pavlovski I, Maacha S, Gentilcore G, **Toufiq M**, ..., Chaussabel D. High-temporal resolution profiling reveals distinct immune trajectories following the first and second doses of COVID-19 mRNA vaccines. *Sci Adv*. 2022 Nov 11;8(45):eabp9961. (PMID: 36367935)
2. Sharari S, Kabeer B, Mohammed I, Haris B, Pavlovski I, Hawari I, Bhat AA, **Toufiq M**, Tomei S, Mathew R, Syed N, Nisar S, Maacha S, Grivel JC, Chaussabel D, Ericsson J, Hussain K. Understanding the Role of GLUT2 in Dysglycemia Associated with Fanconi-Bickel Syndrome. *Biomedicines*. 2022 Aug 29;10(9):2114. (PMID: 36140215)
3. Huang SSY, Rinchai D, **Toufiq M**, Kabeer BSA, Roelands J, Hendrickx W, Boughorbel S, Bedognetti D, Van Panhuys N, Chaussabel D, Garand M. Transcriptomic profile investigations highlight a putative role for NUDT16 in sepsis. *J Cell Mol Med*. 2022 Mar;26(5):1714. (PMID: 35174610)
4. **Toufiq M\***, Huang SSY\* (**co-first author**), Boughorbel S, Alfaki M, Rinchai D, Saraiva LR, Chaussabel D, Garand M. SysInflam HuDB, a web resource for mining human blood cells transcriptomic data associated with systemic inflammatory responses to sepsis. *J Immunol*, 2021 Nov 1;207(9):2195. (PMID: 34663591)
5. Huang SSY, **Toufiq M**, Saraiva LR, Van Panhuys N, Chaussabel D, Garand M. Transcriptome and Literature Mining Highlight the Differential Expression of ERLIN1 in Immune Cells during Sepsis. *Biology*, 2021 Aug 5;10(8):755. (PMID: 34439987)
6. Altman MC, Rinchai D, Baldwin N, **Toufiq M**, ..., Chaussabel D. Development of a fixed module repertoire for the analysis and interpretation of blood transcriptome data. *Nature Communication*, 2021 Jul 19;12(1):4385. (PMID: 34282143)
7. Garand M, **Toufiq M**, Singh P, Huang SSY, Tomei S, Mathew R, Mattei V, Al Wakeel M, Sharif E, Al Khodor S. Immunomodulatory effects of vitamin D supplementation in a deficient population. *Int. J. Mol. Sci*, 2021 May 10;22(9):5041. (PMID: 34068701)
8. Rinchai D, Roelands J, **Toufiq M**, Hendrickx W, Altman MC, Bedognetti D, Chaussabel D. BloodGen3Module: blood transcriptional module repertoire analysis and visualization using R. *Bioinformatics*, 2021 Feb 24;37(16):2382. (PMID: 33624743)

9. Rinchai D, Altman MC, Konza O, Hässler S, Martina F, **Toufiq M**, Garand M, Syed Ahamed Kabeer B, Palucka K, Mejias A, Ramilo O, Bedognetti D, Mariotti-Ferrandiz E, Klatzmann D, Chaussabel D. Definition of erythroid cell-positive blood transcriptome phenotypes associated with severe respiratory syncytial virus infection. *Clin Transl Med*, 2020 Dec;10(8):e244. (PMID: 33377660)
10. Rawat A, Rinchai D, **Toufiq M**, Marr AK, Kino T, Garand M, Tatari-Calderone Z, Syed Ahamed Kabeer B, Krishnamoorthy N, Bedognetti D, Karim MY, Sastry KS, Chaussabel D. A Neutrophil-Driven Inflammatory Signature Characterizes the Blood Transcriptome Fingerprint of Psoriasis. *Front Immunol*, 2020 Nov 24;11:587946. (PMID: 33329570)
11. Rinchai D\*, Syed Ahamed Kabeer B\*, **Toufiq M\*** (co-first author), Tatari-Calderone Z, Deola S, Brummaier T, Garand M, Branco R, Baldwin N, Alfaki M, Altman MC, Ballestrero A, Bassetti M, Zoppoli G, De Maria A, Tang B, Bedognetti D, Chaussabel D. A modular framework for the development of targeted Covid-19 blood transcript profiling panels. *J Transl Med*, 2020 Jul 31;18(1):291. (PMID: 32736569)
12. **Toufiq M**, Roelands J, Alfaki M, Syed Ahamed Kabeer B, Saadaoui M, Lakshmanan AP, Bangarusamy DK, Murugesan S, Bedognetti D, Hendrickx W, Al Khodor S, Terranegra A, Rinchai D, Chaussabel D, Garand M. Annexin A3 in sepsis: novel perspectives from an exploration of public transcriptome data. *Immunology*, 2020 Dec;161(4):291. (PMID: 32682335)
13. Mathew R, **Toufiq M**, Mattei V, Al Hashmi M, Shobha Manjunath H, Syed Ahamed Kabeer B, Calzone R, Cugno C, Chaussabel D, Deola S, Tomei S.. Influence of storage conditions of small volumes of blood on immune transcriptomic profiles. *BMC Res Notes*, 2020 Mar 13;13(1):150. (PMID: 32169090)
14. Roelands J, Garand M, Hinchcliff E, Ma Y, Shah P, **Toufiq M**, Alfaki M, Hendrickx W, Boughorbel S, Rinchai D, Jazaeri A, Bedognetti D, Chaussabel D. Long-Chain Acyl-CoA Synthetase 1 Role in Sepsis and Immunity: Perspectives From a Parallel Review of Public Transcriptome Datasets and of the Literature. *Front Immunol*, 2019 Oct 18;10:2410. (PMID: 31681299)
15. Riyapa D, Rinchai D, Muangsombut V, Wuttinontanachai C, **Toufiq M**, Chaussabel D, Ato M, Blackwell JM, Korbsrisate S. Transketolase and vitamin B1 influence on ROS-dependent neutrophil extracellular traps (NETs) formation. *PLoS One*, 2019 Aug 15;14(8):e0221016. (PMID: 31415630)
16. Huang SSY, Al Ali F, Boughorbel S, **Toufiq M**, Chaussabel D, Garand M. A curated collection of transcriptome datasets to investigate the molecular mechanisms of immunoglobulin E-mediated atopic diseases. *Database*, 2019 Jan 1;2019:baz066. (PMID: 31290545)
17. Brummaier T, Syed Ahamed Kabeer B, Lindow S, Konje JC, Pukrittayaamee S, Utzinger J, **Toufiq M**, Antoniou A, Marr AK, Suriyakan S, Kino T, Al Khodor S, Terranegra A, Nosten F, Paris DH, McGready R, Chaussabel D. A prospective cohort for the investigation of alteration in temporal transcriptional and microbiome trajectories preceding preterm birth: a study protocol. *BMJ Open*, 2019 Jan 15;9(1):e023417. (PMID: 30782707)

#### Application Note

1. **Toufiq M**, Deshmukh S, Ramachandrupa S, Cherukuri S. Integrated analysis using RNA-Seq and ChIP-Seq data to understand the regulation of cardiogenesis. *Published on Strand NGS website*, 2018. ([Link](#))

#### Posters and Peer-Reviewed Abstracts

1. **Toufiq M**, Rinchai D, Kabeer BSA, Chaussabel D. Similarities in the Blood Transcriptional Signatures of Covid-19 Infection and Transcriptional Signatures of Influenza using a Blood Modular Repertoire Analysis Framework. *Precision Medicine and Functional Genomics (PMFG21)*, 04-06 December, 2021, Doha, Qatar. (Poster Presentation)
2. **Toufiq M**, Kabeer BSA, Garand M, Rinchai D, Chaussabel D. In Depth Functional Annotation of a Blood Transcriptome Modular Framework in Pregnancy. *Maternal and Child Health Symposium (MCH)*, 07-09 March, 2020, Qatar National Convention Center (QNCC) Doha, Qatar. (Poster Presentation)
3. Kabeer BSA, Brummaier T, Rinchai D, **Toufiq M**, ..., Chaussabel D. Monitoring Of Blood Transcriptional Changes During Pregnancy Using A Transcriptome Fingerprinting Assay. *Maternal and Child Health Symposium (MCH)*, 07-09 March, 2020, Qatar National Convention Center (QNCC) Doha, Qatar. (Co-authorship)
4. Al Sulaiti A, Al Khulaifi M, Mathew R, Mattei V, **Toufiq M**, ..., Macalli C. The usage of umbilical cord blood from new born babies at Sidra Medicine to develop adoptive cell therapy (ACT) for both pediatric and adult cancer patients. *Maternal and Child Health Symposium (MCH)*, 07-09 March, 2020, Qatar National Convention Center (QNCC) Doha, Qatar. (Co-authorship)
5. Huang SSY, **Toufiq M**, Chaussabel D, Garand M. Potential Role of ERLIN1 in Immunometabolism Regulation During Sepsis. *CUDOS, 3<sup>rd</sup> Annual Congress of Current Understanding in Diabetes, Obesity and Metabolic Syndromes*, 20-26 November, 2019, Qatar National Convention Center (QNCC) Doha, Qatar. (Co-authorship)
6. Kabeer BSA, Brummaier T, **Toufiq M**, ..., Chaussabel D. Monitoring of Blood Transcriptional Changes During Pregnancy Using a Transcriptome Fingerprinting Assay. *DOHaD World Congress - The International Society for Developmental Origins of Health and Disease*, 20-23 October, 2019, Melbourne, Australia. (Co-authorship)
7. Huang SSY, Hasan W, Sharade RS, **Toufiq M**, ..., Garand M. Immunology of Sepsis: Novel Implications for the Endoplasmic Reticulum Protein ERLIN1. *Keystone Symposia meeting on "Immunometabolism, Metaflammation and Metabolic Disorders"*, 14-18 April, 2019, Vancouver, British Columbia, Canada. (Co-authorship)
8. Riyapa D, Rinchai D, Muangsombut V, Wuttinontananchai C, **Toufiq M**, ..., Korbsrisate S. Transketolase and vitamin B1 influence on Staphylococcus aureus-mediated neutrophil extracellular traps formation. *29<sup>th</sup> ECCMID - European Congress of Clinical Microbiology & Infectious Disease*, 13-16 April 2019, Amsterdam, Netherlands. (Co-authorship)
9. **Toufiq M**, Deshmukh S, Ramachandrula S, Cherukuri S. Integrated analysis using RNA-Seq and ChIP-Seq data to understand the regulation of cardiogenesis. Poster. *2017 Annual Meeting of The American Society of Human Genetics (ASHG)*, 17-21 October, 2017, Orlando. (Poster Presentation)
10. Kumar J, **Toufiq M**, Nagendra HG. Computational Studies of PP2A with Small Molecule Activators Suggests Decreased Tau Phosphorylation and Reduced NFT in Alzheimer's disease. *International conference on innovations in Biotechnology*. 10-14 August, 2013, Kollam, Kerala, India. (Co-authorship)

#### Peer-Reviewed Abstracts

1. Al Sulaiti A, El-Anbari M, Al Khulaifi M, **Toufiq M**, ..., Macalli C. The deep phenotype characterization of 'Off-the-Shelf' CD19-chimeric antigen receptor (CAR) T cells allows to identify their subset complexity and to optimize their manufacturing. *Journal for ImmunoTherapy of Cancer (BMJ Specialist Journals)*, 2021, 9 (Suppl\_3):A111. (Co-authorship, [Link](#))

2. Merav B, Rinchai D, **Toufiq M**, ..., Deola S. Pre-Transplant Gene Expression May Predict Risk of Graft Versus Host Disease. *American Society of Hematology, Blood*, 2020 136, (Suppl\_1):13. (Co-authorship, [Link](#))
3. Al Sulaiti A, Al Khulaifi M, Ravindran S, El-Anbari M, **Toufiq M**, ..., Macalli C. Optimizing the generation from umbilical cord blood of ‘off-the-shelf’ CD19-chimeric antigen receptor (CAR) expressing T cells. *Journal for ImmunoTherapy of Cancer (BMJ Specialist Journals)*, 2020, 8 (Suppl\_3):A135 (Co-authorship, [Link](#))
4. Merav B, Woo A, **Toufiq M**, ..., Deola S. Mapping the Road of Gvhd and GVT: A Longitudinal Study of Immune-Transcriptome Signatures As Novel Approach to Solve Post-Allogeneic Hematopoietic Cell Transplantation Dilemmas. *American Society of Hematology, Blood*, 2019, 134 (Suppl\_1):4550. (Co-authorship, [Link](#))

## Academic Workshops and Invited Lectures

1. Organized an online “Collective Omics Data” global training hands-on workshop on Covid-19 Blood Transcriptomics for student’s and biomedical researchers at Sidra Medicine, Doha, Qatar. 08 November, 2021. (Participation from Qatar, Brazil, India, Georgia, and Italy). ([Training Resource](#))
2. Expert lecture on “Identification of Gene Expression Diagnostic Signatures of Sepsis using Blood Transcriptome Modular Repertoire Analysis” in Sidra Research Series conducted by Research Department, Sidra Medicine, Doha, Qatar. 15 June, 2021.
3. Participated in an online “Gene Literature Retrieval, Profiling, and Visualization hands-on training workshop for early career researchers” at Sidra Medicine, Doha, Qatar. 26 January, 2021. ([Proof of Principle](#))
4. Expert lecture on “Sepsis GXB: an interactive collection of blood transcriptome datasets to interrogate genetic biomarkers of sepsis” in Sidra Research Series conducted by Research Department, Sidra Medicine, Doha, Qatar. 23 June, 2020.
5. Organized an onsite “Collective Omics Data” hands-on training workshop on gene-centric approaches for Qatar University student’s and biomedical researchers at Sidra Medicine, Doha, Qatar. 19 September, 2019. ([Training Resource](#))
6. Expert lecture on “ImmPort: An Interface for Data Sharing, Analysis and Scientific Discovery in all areas of Immunological Research” in Immunology Research Series jointly conducted by Immunology Program and Research Department, Sidra Medicine, Doha, Qatar. 16 April, 2019.
7. Organized an onsite "Collective Omics Data" hands-on training workshop on candidate gene investigation of Sepsis for Mahidol Oxford Tropical Medicine Research Unit (MORU) students and biomedical researchers at MORU, Bangkok, Thailand. 03-07 December, 2018. ([Training Resource](#))
8. Organized an onsite “Collective Omics Data” hands-on training workshop on candidate gene investigation of Sepsis for biomedical researchers at Sidra Medicine, Doha, Qatar. 08 July, 2018. ([Training Resource](#))
9. Participated in “Qatar Genome Second Symposium under the theme “Ethics, Policies, and Best Practices in Precision Medicine” conducted in collaboration with Research Department- Ministry of Public Health, Qatar And Research Center for Islamic Legislation and Ethics, Qatar at Qatar National Convention Center (QNCC) Doha, Qatar. 29-30 April, 2018.
10. Expert lecture on “Gene Ontology and its Application” conducted by Department of Biotechnology, Sir MVIT, Bangalore, India. 29 September, 2016.
11. Panel discussion member in “One Day Awareness Programme on “Trends and Career Opportunities in Biotechnology” conducted by Department of Biotechnology, Sir MVIT, Bangalore, India. 13 February, 2016.

12. Expert lecture on “Computational Analysis of Gene Expression Data & Gene Sequencing Data” conducted by Department of Biotechnology, Sir MVIT, Bangalore, India. September, 2015.
13. Expert lecture on “Latest Trends in Bioinformatics & Its Applications” in Two Day National Level Workshop conducted by Department of Biotechnology, Adhiyamaan College of Engineering, Hosur, India. 21-22 September, 2015.
14. Workshop on “Weeklong skill development program on computational genomics & in-silico proteomics” conducted by the Department of Biotechnology. Sir MVIT, Bangalore, India. 1<sup>st</sup> Week of February, 2013.
15. Workshop on “Weeklong hands-on training programme on biotechnology techniques” conducted by the Department of Biotechnology, Sir MVIT, Bangalore. January, 2013.
16. Organizing committee member for the “National Conference on Biopharmaceuticals and Healthcare” conducted by the Department of Biotechnology at Sir MVIT Campus, Bangalore, India. 04-05 November, 2011.
17. Participated at “National Conference on Molecular Medicine and Nano biotechnology” jointly conducted by the Department of Biotechnology, Sir MVIT and Reva Institute at NIMHANS Convention Centre, Bangalore, India. 13-14 October, 2010.
18. Participated at “National Conference on Medical Biotechnology and Clinical Research” jointly conducted by Department of Biotechnology, Sir MVIT and M.S. Ramaiah Institute of Technology, at J.N. Tata Auditorium, IISc Campus, Bangalore, India. 02-03 October, 2009.