

ATHAR ANSARI

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DEPARTMENT/COLLEGE

Biological Sciences/College of Liberal Arts and Sciences, Wayne State University, Detroit, Michigan
Molecular Biology and Genetics Program/Karmanos Cancer Institute, Detroit, Michigan

PRESENT RANK

Professor of Biological Sciences, Wayne State University (August 2022 to present)
Scientific Member of Tumor Biology and Microenvironment Program at Karmanos Cancer center (May 2010 to present)

WSU APPOINTMENT HISTORY

2022/ Professor
2012/ Associate Professor
2006/ Assistant Professor

FACULTY APPOINTMENTS AT OTHER INSTITUTIONS (Years and Rank)

Assistant Professor (July 2005- July 2006)
Department of Chemistry and Biochemistry
University of Regina, Regina, Saskatchewan, Canada

Adjunct Assistant Professor (July 2000- June 2005)
Department of Biochemistry/Pharmacology
University of Medicine and Dentistry of New Jersey
Piscataway, NJ 08554

EDUCATION

Post-doctoral fellow (June 1995-October 2000)
Dept of Pharmacology, Laboratory of Dr. Marc Gartenberg
Robert Wood Johnson Medical School
University of Medicine & Dentistry of New Jersey

Post-doctoral fellow (April 1993- May 1995)
Dept of Biochemistry, Laboratories of Dr. Danny Reinberg & Dr. Beate Schwer
Robert Wood Johnson Medical School
University of Medicine & Dentistry of New Jersey

Ph.D. (1986-1993), University of Delhi, India
Title of thesis: Purification and characterization of a protein kinase from dwarf pea epicotyls that phosphorylates and regulates RNA polymerase II activity in vitro.

HONORS/AWARDS

- 'Career Development Chair Award' conferred by the Wayne State University for 2013-2014
- Editorial board of Journal of Biological Chemistry selected the paper [Mukundan B and Ansari A (2011) A novel role of Mediator subunit Srb5/Med18 in termination of transcription] as 'Paper of the week'.
- Annual Meeting Compendia of American Society of Biochemistry and Molecular Biology (2010) recognized the work from the lab (El Kaderi et al., 2009, J. Biol. Chem. 284, 25015-25025) as one of the six significant papers recently published in the Journal of Biological Chemistry on the initiation of transcription in recent years (<http://www.jbc.org/site/meeting2010/dna/>).
- 'Excellence in Teaching Award' by College of Liberal Arts and Sciences, Wayne State University (2009)

GRANTS AWARDED

Funding Agency: National Institute of Health
Title: A new paradigm for the general transcription factor TFIIB functionality in termination and promoter directionality
Period of Coverage: September 1, 2019 to May 31, 2027
Amount: \$1,523,584

Funding Agency: National Science Foundation
Title: An investigation into a novel role of Rat1 termination factor in splicing of mRNA.
Period of Coverage: November 15, 2019 to October 30, 2021
Amount: \$269,285

Funding Agency: National Science Foundation
Title: Regulation of transcription by promoter-terminator interaction
Period of Coverage: September 15, 2010 to September 14, 2017
Amount: \$718,281

Funding Agency: 'Grant Boost Award' from Office of Vice President of Research at Wayne State University
Title: An investigation into the intron-mediated regulation of transcription by the looped gene architecture
Period of Coverage: June 2017 to June 2019

Funding Agency: 'Grant Boost Award' from Office of Vice President of Research at Wayne State University
Title: Role of gene looping in intron-mediated regulation of transcription
Period of Coverage: 1 year (January 2014 to December 2015)

Amount: \$35,000

Funding Agency: Canada's NSERC-Discovery grant (RGPIN 326768-06) entitled "Chromatin-mediated transcriptional regulation by the environment in *Saccharomyces cerevisiae*" (2006).

PUBLICATIONS

Research conducted at WSU

- (1) *O'Brien M, and Ansari A (2022) Beyond the canonical role of TFIIB in eukaryotic transcription. **Current Genetics** 1-7.
- (2) Calvo O, Ansari A and Navarro F (2021) Lesser known world of RNA polymerases. **Frontiers in Molecular Bioscience** 8, 811413.
- (3) *Dwyer K, *Agarwal N, #Gega A and Ansari A (2021) Proximity to the promoter and terminator regions regulates transcription enhancement potential of an intron. **Frontiers in Molecular Bioscience** 8, 712639.
- (4) Dhoondia Z, Elewa H, Malik M, Arif Z, Pique-Regi R and Ansari A (2021) A termination-independent role of Rat1 in cotranscriptional splicing. **Nucleic Acid Research** 49, 5520-5536.
- (5) Dwyer K, Agarwal N, Pile L and Ansari A (2021) Gene architecture facilitates intron-mediated enhancement of transcription. **Frontiers in Molecular Bioscience** 8, 276.
- (6) O'Brien M, and Ansari A (2021) Critical role of TFIIB in viral pathogenesis. **Frontiers in Molecular Bioscience** 8, 308.
- (7) Al Husini N, Medler S, Ansari A (2020) Crosstalk of promoter and terminator during RNA polymerase II transcription cycle. **Biochimica Biophysica Acta Gene Regulatory Mechanisms** 1863, 194657
- (8) Fuster PA, *O'Brien MJ, Polo NG, *Pereira B, *Dhoondia Z, Ansari A and Calvo O (2019) RNA polymerase II plays an active role in the formation of gene loops through the Rpb4 subunit, **Nucleic Acid Research** 47, 8975-8987.
- (9) Ansari A (2019) Recent Trends in Eukaryotic Transcription: Crucial Role of Gene Architecture in Transcriptional Regulation. **J Cytol Molecul Biol.** 4, 2

- (10) *Al Husini N, Sharifi A, Mousavi SA, Chitsaz H and Ansari A (2017) Genomewide analysis of Clp1 function in transcription in budding yeast. **Scientific Reports** 7, 6894.
- (11) *Dhoondia Z, *Tarockoff R, *Alhusini N, *Medler S, *Agarwal N and Ansari A (2017) Analysis of termination of transcription using BrUTP-strand-specific transcription run-on (TRO) approach. **Journal of Visualized Experiments** 121: e55446.
- (12) *Agarwal N and Ansari A (2016) Enhancement of transcription by a splicing-competent intron is dependent on promoter directionality. **PLOS Genetics** 12: e1006047
- (13) Cloutier SC, Wang S, Ma WK, *Al Husini N, *Dhoondia Z, Ansari A, Pascuzzi PE and Tran EJ (2016) Regulated Formation of lncRNA-DNA Hybrids Enables Faster Transcriptional Induction and Environmental Adaptation. **Molecular Cell** 61, 393-404.
- (14) *Medler S and Ansari A (2015) Gene looping facilitates TFIID kinase-mediated termination of transcription. **Scientific Reports** 5, 12586.
- (15) *Al Husini N, #Kudla P and Ansari A (2013) A role for CF1 3' end processing complex in promoter-associated transcription. **PLOS Genetics** 9: e1003722.
- (16) *Mukundan B and Ansari A (2013) Srb5-mediated termination of transcription is dependent on gene looping. **J. Biol. Chem.** 288, 11384-11394.
- (17) *El Kaderi B, *Medler S and Ansari A (2012) Analysis of interactions between genomic loci through chromosome conformation capture (3C). **Current Protocols in Cell Biology** 56(22.15), 1-22.
- (18) *Moabbi AM, *Agarwal N, *El Kaderi B and Ansari A (2012) Intron-mediated transcriptional regulation is dependent on gene looping. **P. Natl. Acad. Sci. USA.** 109, 8505-8510.
- (19) *Mukundan B and Ansari A (2011) A novel role for Mediator complex subunit Srb5/Med18 in termination of transcription. **J. Biol. Chem.** 286, 37053-37057.
- (20) *Medler S, *Al Husini N, *Raghunayakula S, *Mukundan B, #Aldea A and Ansari A (2011) Evidence for a complex of TFIIB with poly(A) polymerase and cleavage factor I subunits required for gene looping. **J. Biol. Chem.** 286, 33709-33718.

- (21) *El Kaderi B, *Medler S, *Raghunayakula S and Ansari A (2009) Gene looping is conferred by activator-dependent interactions between transcription initiation and termination machineries. **J. Biol. Chem.** 284, 25015-25025.
- (22) Hampsey M, Singh BN, Ansari A, Laine JP, Krishnamurthy S (2011) Control of eukaryotic gene expression: Gene loops and transcription memory. **Adv. Enzyme Reg.** 51,118-125.
- (23) Singh BN, Ansari A, and Hampsey M (2009) Detection of gene loops by 3C in yeast. **Methods** 48, 361-367.

Prior publications (Before WSU)

- (24) Ansari A and Hampsey M (2005) A role for CPF 3'-end processing machinery in RNAP II dependent gene looping **Genes Dev.** 19, 2969-2978.
(**276 citations**, *Impact Factor: 8.990*)
- (25) Heine M, Cramm-Behrens CI, Ansari A, Chu H-P, Ryazanov AG, Naim HY and Jacob R (2005) Alpha-Kinase1, a New component in Apical Protein Transport. **J. Biol. Chem.** 280, 25637-25643.
(**57 citations**, *Impact Factor: 4.106*)
- (26) Ryazanova LV, Dorovkov MV, Ansari A and Ryazanov AG (2004) Characterization of the Protein Kinase Activity of TRPM7/Chak1, a Protein Kinase Fused to TRP Ion Channel. **J. Biol. Chem.** 279, 3708-3716.
(**162 citations**, *Impact Factor: 4.106*)
- (27) Andrulis ED, Zappula DC, Ansari A, Perrod S, Laiosa CV, Gartenberg MR, Sternglanz R (2002) Esc1p, a Nuclear Periphery Protein Required for Sir4-Based Plasmid Anchoring and Partitioning. **Mol. Cell. Biol.** 22, 8292-8301.
(**159 citations**, *Impact Factor: 3.735*)
- (28) Ansari A and Gartenberg MR (1999) Persistence of an Alternate Chromatin Structure at Silenced Loci in vitro. **Proc. Natl. Acad. Sci. (USA)** 96, 343-348.
(**31 citations**, *Impact Factor: 9.580*)
- (29) Ansari A, Tzu-Hao Cheng and Gartenberg MR (1999) Isolation of Selected Chromatin Fragments from Yeast by Site-Specific Recombination in vitro. **Methods** 17, 104-111.
(**13 citations**, *Impact Factor: 3.782*)

- (30) Ansari A and Gartenberg MR (1997) The Yeast Silencing Factor Sir4p Anchors and Partitions Plasmid. **Mol. Cell. Biol.** 17, 7061-7068.
(70 citations, Impact Factor: 3.735)
- (31) Ansari A and Schwer B (1995) SLU7 and a Novel Activity SSF1 act subsequent to PRP16 in the Second Step of Yeast pre-mRNA Splicing. **EMBO J.** 14, 4001-4009.
(132 citations, Impact Factor: 11.227)
- (32) Drapkin R, Reardon J, Ansari A, Huang JC, Zawel L, Ahn KJ, Sancar A and Reinberg D (1994) TFIIH, a Link Between RNA polymerase II Transcription and DNA Excision Repair. **Nature** 368, 769-772.
(483 citations, Impact Factor: 43.070)
- (33) Ansari A and Sachar RC (1994) Purification and Characterization of a Protein Kinase From Dwarf Pea Epicotyls. **Phytochemistry**, 36, 553-558.
(4 citations, Impact Factor: 2.905)
- (34) Saluja D, Ansari A, Sood A and Sachar RC (1989) Early Response to Gibberellic Acid of Monophenolase Activity in De-embryonated Half Seeds of Wheat. **Phytochemistry** 28,341-344.
(1 citation, Impact Factor: 2.905)

INVITED SEMINARS OR LECTURES PRESENTED IN LAST FIVE YEARS

- (1) **University of Delhi, Delhi**, India (January 3, 2023), “When the terminator meets promoter, the polymerase starts making sense”.
- (2) RiboClub, **University of Sherbrooke**, Sherbrooke, Quebec (June 6, 2022), “Gene looping is a determinant of uaRNA and mRNA transcription”.
- (3) **University of California, Davis**, CA (March 1, 2022), “When the terminator meets promoter, the polymerase starts making sense”.
- (4) **Tufts University and Harvard University** Transcription laboratories, MA (October 4, 2021), “A non-termination role of Rat1 in cotranscriptional splicing”.
- (5) **Imperial College, London**, Program in Molecular and Cellular Medicine (07/27/2021), “Gene looping confers promoter directionality”.
- (6) **Universidad de Jaen and RNA network, Spain** (07/21/2021), “When the terminator meets promoter, end becomes a new beginning”
- (7) **Albion College**, Department of Biology, Albion, MI, (03/29/18), “When the promoter meets the terminator, the end becomes a new beginning.”

JOURNAL/EDITORIAL/EXPERT REVIEWER ACTIVITY

Journal Editorial activity

- (1) Associate editor and member of the editorial board of '**Frontiers in Molecular Biosciences**', (Switzerland) (2021-present)
- (2) Invited member of the editorial board of the Biochemistry and Molecular Biology section of '**Biology**', (a journal of MDPI group, Switzerland) (2021-present)
- (3) Invited guest editor of the special issue on the topic "**The Lesser Known World of RNA Polymerases**" published by 'Frontiers in Molecular Biosciences, Switzerland (2020-2021)
- (4) Invited member of the editorial board of the '**Current Trends in Genetics and development**' (USA) (2019-present)
- (5) Invited member of the editorial board of the '**AIMS Genetics**' (USA) (2017-present)
- (6) Invited member of the editorial board of '**Scientific Reports**', (a journal of Nature group, London) (2016- present)
- (7) Invited member of the editorial board of the '**Journal of Cytology and Molecular Biology**', Avens Publishing Group, Boston, MA, USA, (2014-present)

Manuscript Review

- (1) *RNA Biology* (2022)
- (2) *eLife* (2022)
- (3) *PNAS (USA)* (2022)
- (4) *Computational and Structural Biotechnology Journal* (2022)
- (5) *Egyptian J. of Medical Human Genetics* (2022)
- (6) *Genetics* (2022)
- (7) *Frontiers in Pediatrics* (2022)
- (8) *Nucleic Acids Research* (2013, 2016, 2020, 2021, 2022)
- (9) *International Journal of Molecular Sciences* (2021, 2022a, 220b)
- (10) *BBA – Gene Regulatory Mechanisms* (2012, 2022)
- (11) *Frontiers in Molecular Biosciences* (2021, 2022)
- (12) *Scientific Reports; Nature* (2013, 2015, 2016a, 2016b, 2017a, 2017b, 2017c, 2017d, 2018a, b, c, d 2019a, b, c, d, 2020a, b, 2021, 2022a, 2022b)
- (13) *EMBO Reports* (2012, 2021)
- (14) *Biocell* (2021)
- (15) *Viruses* (2021)
- (16) *Plant Direct Journal* (2021)
- (17) *Current Molecular Medicine* (2019, 2020, 2021a, 2021b)
- (18) *Journal of Cytology and Molecular Biology* (2014, 2017, 2021)
- (19)
- (20) *PLoS ONE* (2012, 2014, 2016, 2019)
- (21) *Molecular Genetics and Genomics* (2019)
- (22) *Methods* (2019)

- (23) *AIMS Genetics* (2018, 2019)
- (24) *Computational and Structural Biotechnology Journal* (2019)
- (25) *International Journal of Physics Research and Application* (2019)
- (26) *Nature Communication* (2015, 2017)
- (27) *Critical Reviews in Biochemistry and Molecular Biology* (2017)
- (28) *The Plant Cell* (2016, 2017)
- (29) *Genetics* (2016)
- (30) *FEMS Yeast Research* (2016)
- (31) *BBA – Molecular Cell Research* (2015)
- (32) *Molecular Biology Reports* (2015)
- (33) *Genome Biology* (2013)
- (34) *Transgenic Research* (2013)
- (35) *Journal of Clinical Investigation* (2013)
- (36) *Science* (2012)
- (37) *Plant Biotechnology Journal* (2012)
- (38) *Genetic Research International* (2011)
- (39) *Molecular Microbiology* (2009)

Funding Agency Grant Review

- (1) *Polish National Agency for Academic Exchange (NAWA)*, Poland (2021)
- (2) *National Science Foundation (NSF)*, USA (2014, 2015, 2020, 2021)
- (3) *National Science and Engineering Research Council (NSERC)*, Canada. (2009, 2012)
- (4) *Medical Research Council (MRC)*, UK. (2014)
- (5) *Wellcome Trust (WT)*, UK (2016)
- (6) *Karmanos Cancer Institute (KCI) Strategic Research Initiative Grant*, Detroit, USA (2016)

University Program Review

- (1) Review two new interrelated biotechnology programs at the **University of New Hampshire; M.S. Biotechnology: Industrial and Biomedical Sciences and M.S. Molecular and Cellular Biotechnology** on March 11-March 12, 2020.
- (2) Reviewed **Biomedical Engineering Program** of Wayne State University, December 2, 2021

SERVICE

Committee Assignments in Last Five Years

- (1) Graduate director (2019-2021 and 2022-present)
- (2) Chair, Graduate committee (2021-2022)
- (3) Chair, Division of Microbiology, Molecular Biology and Biotechnology (2015-2020)
- (4) Director MS Biotechnology Program (2014-2019)

- (5) Biology Research Learning Community (2013-2019)
- (6) 'Career Development Chair' Selection Committee, Wayne State University (2014, 2017)
- (7) 'Dennis Smith Award' Evaluation Committee, Department of Biological Sciences (2009, 2017, 2018)
- (8) Promotion and Tenure Committee, Department of Biological Sciences (2013-2014, 2016-2017)
- (9) Salary Committee, Department of Biological Sciences (2016-2017)
- (10) Graduate Committee, Department of Biological Sciences (2007-2012, 2014-2019)
- (11) Faculty Search Committee, Department of Biological Sciences (five committees from 2008-2015)