

# Curriculum vitae (CV)

Aynaz Mihanfar

Ph.D. in Clinical Biochemistry



## Personal Information

- Date of Birth: 12.07.1989
- Place of birth: Shahindezh, Iran
- Nationality: Iranian
- Phone: +989147122014
- E-mail: [ainazmihanfar2013@gmail.com](mailto:ainazmihanfar2013@gmail.com)

## • **Scientometric indicators**

Google scholar h-index: 24

Scopus h-index: 23

i-10 index: 39

## Thesis/Educations

- **Ph.D. degree in Clinical Biochemistry; 2021**

Urmia University of Medical Sciences, Urmia-Iran.

Title of Ph.D. thesis: Evaluation of the effect of quercetin and fisetin on energy sensors, AMPK and SIRT-1, in rat model of polycystic ovary syndrome

- **MSc degree in Clinical Biochemistry; 2016**

Tabriz University of Medical Sciences, Tabriz-Iran.

Title of MSC thesis: Comparison of Vaspin serum levels and its correlation with nitric oxide metabolites in nephropatic and non nephropatic diabetic patients

- **Bachelor's degree in Medical laboratory science; 2013**

Urmia University of Medical Sciences, Urmia, Iran

## Academic Experience

- Assistant Professor, Urmia University of Medical Sciences, Urmia, Iran (2023-2025)
- Editorial Board, The Open Biochemistry Journal, Bentham Sciences, UAE (2025)
- Editorial Board, The Open Medical Chemistry Journal, Bentham Sciences, UAE (2025)

## Teaching

Teaching Biochemistry for medical Students in Tabriz University of Medical Sciences, Tabriz, Iran (2018)

Teaching Biochemistry for medical Students in Urmia University of Medical Sciences, Urmia, Iran (2022-2024)

Teaching Biochemistry for Master and PhD Students in Urmia University of Medical Sciences, Urmia, Iran (2022-2024)

Teaching Biochemistry for nurse and midwife Students in Urmia University of Medical Sciences, Urmia, Iran (2022-2024)

Teaching Biochemistry for medical Students in Urmia University of Medical Sciences, Urmia, Iran (2022-2025)

Teaching Biochemistry for dentistry Students in Urmia University of Medical Sciences, Urmia, Iran (2023-2025)

## **Publications**

### **Books**

- Regenerative Medicine and Dermatology, Urmia University of Medical Sciences-Urmia (2024, Persian)
- Human Body Biofluids, Ilk Ay – Urmia University of Medical Sciences. Editor: Dr. Aynaz Mihanfar (2024, Persian)
- Compilation the book entitled "Body fluids analysis", Avaye farda Publications, (2021, Persian)
- Translation the book entitled "practical textbook of biochemistry for medical students" Avaye farda Publications, (2022, Persian)

### **Published scientific papers**

|          | <b>Title</b>                                                                                            | <b>Contribution</b> | <b>Journal</b>                                            |
|----------|---------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------|
| <b>1</b> | Ameliorative effects of fisetin in letrozole-induced rat model of polycystic ovary syndrome             | First author        | The Journal of Steroid Biochemistry and Molecular Biology |
| <b>2</b> | Therapeutic potential of quercetin in an animal model of PCOS: Possible involvement of AMPK/SIRT-1 axis | First author        | European Journal of Pharmacology                          |
| <b>3</b> | Polyphenols: Natural compounds with promising potential in treating polycystic ovary syndrome           | First author        | Reproductive biology                                      |
| <b>4</b> | Doxorubicin loaded magnetism nanoparticles based on cyclodextrin                                        | First author        | Biomolecular Concepts                                     |

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|           | dendritic-graphene oxide inhibited MCF-7 cell proliferation                                                                                              |                 |                                                         |
| <b>5</b>  | SIRT1: A promising therapeutic target in type 2 diabetes mellitus                                                                                        | First author    | Archives of Physiology and Biochemistry ( <i>IARP</i> ) |
| <b>6</b>  | In vitro and in vivo anticancer effects of syringic acid on colorectal cancer: Possible mechanistic view                                                 | First author    | Chemico-Biological Interactions                         |
| <b>7</b>  | The role of sphingosine 1 phosphate in coronary artery disease and ischemia reperfusion injury                                                           | First author    | Journal of cellular physiology                          |
| <b>8</b>  | Melatonin increases 5-fluorouracil-mediated apoptosis of colorectal cancer cells through enhancing oxidative stress and downregulating survivin and XIAP | First author    | Bioimpact                                               |
| <b>9</b>  | SIRT3-mediated cardiac remodeling/repair following myocardial infarction                                                                                 | First author    | Biomedicine & Pharmacotherapy                           |
| <b>10</b> | Serum Levels of Vaspin and Its Correlation with Nitric Oxide in Type 2 Diabetic Patients with Nephropathy                                                | First author    | Current Diabetes Reviews                                |
| <b>11</b> | S100 protein family and embryo implantation                                                                                                              | Co-First author | Journal of cellular biochemistry                        |
| <b>12</b> | N1-methylnicotinamide (MNAM) as a guardian of cardiovascular system                                                                                      | Co-First author | Journal of cellular physiology                          |
| <b>13</b> | Ovarian cancer stem cell: A potential therapeutic target for overcoming multidrug resistance                                                             | First author    | Journal of cellular physiology                          |
| <b>14</b> | MicroRNA-mediated drug resistance in ovarian cancer                                                                                                      | First author    | Journal of cellular physiology                          |
| <b>15</b> | Endothelins and their receptors in embryo implantation                                                                                                   | First author    | Journal of cellular biochemistry                        |
| <b>16</b> | Exosomal miRNAs in osteoarthritis                                                                                                                        | First author    | Molecular Biology Reports                               |
| <b>17</b> | The roles of non-coding RNAs in Parkinson's disease                                                                                                      | Second          | Molecular biology reports                               |
| <b>18</b> | Crosstalk between miRNA and PI3K/AKT/mTOR signaling pathway in cancer                                                                                    | Second          | Life Sciences                                           |

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| <b>19</b> | Molecular mechanisms underlying ameliorative impact of melatonin against age-dependent chronic arsenic toxicity in rats' brains                                                | Second | Journal of Experimental Zoology Part A: Ecological and Integrative Physiology |
| <b>20</b> | DNA damage response and repair in colorectal cancer:<br>Defects, regulation and therapeutic implications                                                                       | Fourth | DNA repair                                                                    |
| <b>21</b> | Nicotinamide and its metabolite N1-Methylnicotinamide alleviate endocrine and metabolic abnormalities in adipose and ovarian tissues in rat model of Polycystic Ovary Syndrome | Fourth | Chemico-Biological Interactions                                               |
| <b>22</b> | DNA damage response and repair in ovarian cancer: Potential targets for therapeutic strategies                                                                                 | Fourth | DNA repair                                                                    |
| <b>23</b> | Overcoming multidrug resistance in cancer: Recent progress in nanotechnology and new horizons                                                                                  | Fourth | IUBMB life                                                                    |
| <b>24</b> | Melatonin: An important anticancer agent in colorectal cancer                                                                                                                  | Fourth | Journal of cellular physiology                                                |
| <b>25</b> | Targeting PI3K/Akt/mTOR signaling pathway by polyphenols: Implication for cancer therapy                                                                                       | Fourth | Life sciences                                                                 |
| <b>26</b> | Dual role of TGF-B in early pregnancy: Clues from tumor progression                                                                                                            | Fourth | Biology of Reproduction                                                       |
| <b>27</b> | 53BP1: A key player of DNA damage response with critical functions in cancer                                                                                                   | Fourth | DNA repair                                                                    |
| <b>28</b> | Topical application of <i>Dianthus</i> essential oil improved the infected healing process of wounds infected with <i>Staphylococcus aureus</i> in an experimental model       | Fourth | Journal of Research in Applied and Basic Medical Sciences                     |
| <b>29</b> | Parasympathetic, but not sympathetic denervation, suppressed colorectal cancer progression                                                                                     | Fourth | European Journal of Pharmacology                                              |

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| <b>30</b> | Exosome-based intercellular communication in female reproductive microenvironments                                                                                                           | Fifth   | Journal of cellular physiology                               |
| <b>31</b> | Co-inhibition of Notch and NF- $\kappa$ B Signaling Pathway Decreases Proliferation through Downregulating I $\kappa$ B- $\alpha$ and Hes-1 Expression in Human Ovarian Cancer OVCAR-3 Cells | Fifth   | Drug research                                                |
| <b>32</b> | Exosomes: natural nanoparticles as bio shuttles for RNAi delivery                                                                                                                            | Fifth   | Journal of Controlled Release                                |
| <b>33</b> | Melatonin-mediated regulation of autophagy: Making sense of double-edged sword in cancer                                                                                                     | Sixth   | Journal of cellular physiology                               |
| <b>34</b> | Quercetin attenuated oxidative DNA damage through NRF2 signaling pathway in rats with DMH induced colon carcinogenesis                                                                       | Sixth   | Life sciences                                                |
| <b>35</b> | Melatonin: An atypical hormone with major functions in the regulation of angiogenesis                                                                                                        | Sixth   | IUBMB life                                                   |
| <b>36</b> | Correlation Between Circulating Visfatin and Nitric Oxide Metabolites Levels in Patients with Diabetic Nephropathy                                                                           | Sixth   | Iranian Journal of Kidney Diseases                           |
| <b>37</b> | Combination of quercetin and exercise training attenuate depression in rats with DMH induced colorectal cancer: Possible involvement of inflammation and BDNF signaling                      | Sixth   | Experimental Physiology                                      |
| <b>38</b> | Association Between Matrix Metalloproteinase-3 Activity and Glomerular Filtration Rate and Albuminuria Status in Patients with Type 2 Diabetes Mellitus                                      | Seventh | Iranian Journal of Kidney Diseases                           |
| <b>39</b> | Association of Leptin-2548G/A polymorphism with diabetic nephropathy in Iranian Azeri Turkish patients                                                                                       | Eighth  | International Journal of Advanced Biotechnology and Research |

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|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------|
| 40 | Follicular Fluid Levels of Adrenomedullin 2, Vascular Endothelial Growth Factor and its Soluble Receptors Are Associated with Ovarian Response During ART Cycles | Tenth                | Geburtshilfe Frauenheilkd      |
| 41 | DNA damage response and breast cancer development: Possible therapeutic applications of ATR, ATM, PARP, BRCA1 inhibition                                         | Eleventh             | DNA repair                     |
| 42 | Critical roles of long noncoding RNAs in breast cancer                                                                                                           | Fifteenth            | Journal of cellular physiology |
| 43 | Exosomes and COVID-19: challenges and opportunities                                                                                                              | Corresponding author | Comparative Clinical Pathology |

### **Research projects**

- Comparison of vaspin serum levels and its correlation with nitric oxide metabolites in nephropatic and non nephropatic diabetic patients **(completed)**
- Evaluating the effect of Syringic acid on proliferation, autophagy and apoptosis through regualtion of oxidative stress and cell growth proteins in colorectal cancer SW-480 cell line **(completed)**
- The effects of oral methylnicotinamide and vanillic acid on testosterone production and insulin function in adipose and ovarian tissues in rat model of PCOS **(completed)**
- Evaluating the role of VE-822 in reducing the drug resistance of Caco-2 colorectal cancer cell line to 5-fluorouracil through DNA damage (ongoing in Urmia)
- Evaluation of WEE1 inhibition by AZD1775 on SW-480 cell susceptibility to VE-822-induced DNA damage and apoptosis (ongoing in Urmia)
- Evaluating the role of miR-146a in the drug resistance of Caco-2 colorectal cancer cell line to 5-fluorouracil through DNA damage (ongoing in Urmia)

- Evaluating the effect of Quercetin on apoptosis and sensitivity of the colon cancer cells to 5-fluorouracil via DNA damage and P-glycoprotein (ongoing in Urmia)
- Evaluating the role of Diosgenin in reversing the drug resistance against 5-fluorouracil in the colorectal cancer cells via P-glycoprotein (ongoing in Urmia)
- Evaluating the effects of combination therapy of miR-383-5p and 5-fluorouracil on the sensitivity of SW-480 colorectal cancer cells to apoptosis (ongoing in Urmia)
- Evaluating the effect of polyethylene glycol-grafted halloysite nanotubes containing quercetin on the cytotoxicity of 5-fluorouracil in SW-480 cell line of colorectal cancer (ongoing in Urmia)

### **Presentations**

- Serum Levels of Vaspin in Type 2 Diabetic Patients with Nephropathy: Possible Predisposing Marker
- Beneficial effects of curcumin in management of polycystic ovary syndrome
- Contradictories in vitamin D supplementation on gene expression of micro RNAs involving in breast carcinogenesis
- cellular mechanisms of memory improving properties of citrus polymethoxylated flavonoid, "NOBILETIN" in Alzheimer disease
- Association of follicular fluid levels of adrenomedullin 2, vascular endothelial growth factor and its soluble receptors with ICSI outcome

### **Workshops**

- **Teacher** in a one-day compressive workshop on "How to write a narrative review?", Urmia University for Medical Sciences, 2021, Urmia, Iran
- Medical Journalism (Tabriz- 2013)
- Handling laboratory Animal workshop (Urmia- 2018)
- Endnote (Tabriz- 2019)
- Stem cell (Tabriz- 2014)

- Flow cytometry (Tabriz- 2019)
- Systematic review (Tabriz-2021)
- Review article (Tabriz-2021)

### **Honors**

- Distinguished as “Talented student” among Ph.D. students of biochemistry, Urmia university of medical sciences, Urmia, Iran.
- Distinguished researcher at the national level (2021)
- 1st rank “Top Researcher” in research festival of Medical Faculty of Urmia University of Medical Sciences, Urmia-Iran, 2021

### **Laboratory and Research Proficiency**

- Rat models (handling, injection, gavage, estrous cycle determination, morris water maze, plus maze and open field tests, PCOS induction, diabetes induction, cancer induction, analgesia, anesthesia and euthanasia)
- Cell culture, cellular proliferation and apoptosis assays, wound healing assay, DNA and RNA extraction, Real-time PCR, electrophoresis techniques, western blotting, Immunohistochemistry and H&E staining.
- ELISA (enzyme-linked immunosorbent assay) and spectrophotometry

### **Language Skills**

Turkish, Persian, English