Expression & Localization of the 14-3-3 Protein Family Within Mammals

Neha Kumrah
Dr. Santanu De, Ph.D.
Halmos College of Natural Science and Oceanography
Nova Southeastern University

Getting Involved

Dr. De sent a message to his previous students inquiring if anyone was interested in working on an Independent Study.

I promptly responded letting him know I was interested!

Summer Meetings

- Weekly Zoom meetings
- Worked on a shared document
- Emails

Research Goal

The goal of this literature review was to study the expression, distribution and localization of 14-3-3 proteins and their isoforms across various mammalian...

- Species
- Cells, Tissues, and Organs
- Developmental Stages

14-3-3 Protein Family

A group of seven similar molecular chaperones. In eukaryotes, these include:

- β (YWHAB)
- γ (YWHAG)
- ε (YWHAE)
- ζ (YWHAZ)
- η (YWHAH)
- τ (YWHAQ)
- σ (YWHAS, stratifin)

- Commonly expressed in mammalian cells.
- Interact with peptide targets within the body.
- Phospho-binding ➜ attach to motifs that have been phosphorylated
- Critical roles in cellular localization, function, and homeostatic regulation.

Helpful Courses

I found these courses to be useful in allowing me to understand the project

- Biology I & II
- Anatomy & Physiology
- Cellular & Molecular Biology

Outcomes

- New, deep understanding of 14-3-3 protein family
- Experience reading, comprehending, and summarizing scientific journals
- Composed a published manuscript
  - https://nsuworks.nova.edu/mako/vol2020/iss2/2/
- Appreciation and respect for the research process