Research & Development Internship at USANA Health Sciences Inc.

Nick Noyce, Utah State University

**Background**

USANA Health Sciences Inc. was founded in 1992 by Dr. Myron Wentz. USANA produces a wide variety of nutritional supplements, beauty products, and an energy drink.

**Project Overview**

- Research and develop enzyme linked immunosorbent assays (ELISA) for the detection of inflammation markers within the human body.
- Research of fatty acids such as: eicosapentaenoic acid, docosahexaenoic acid, oleic acid, arachidonic acid, linoleic acid, α-linolenic acid, saturated and trans fats and their importance within the human body.
- Develop the skills necessary to excel in a professional lab and business environment.
- Refine assay/ lab techniques for future use.

**Data**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Rep #1 absorbance</th>
<th>Rep #2 absorbance</th>
<th>Average absorbance</th>
</tr>
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<tbody>
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<td>-0.00345</td>
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<tr>
<td>DT</td>
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<td>-0.00455</td>
<td>-0.00405</td>
</tr>
</tbody>
</table>

**Results**

**TNF-α**

\[ y = 0.0037x + 0.359 \]

\[ R^2 = 0.9955 \]

**8-isoprostanes**

\[ y = -5.033x + 107.61 \]

\[ R^2 = 0.9898 \]

**Conclusion**

- A variety of fatty acids are essential to the human diet, however, some can be harmful in large quantities.
- ELISA assays are a quick, efficient and reliable way to detect a number of molecules involved with inflammation in the human body.
- An internship with USANA Health Sciences Inc. allowed me to exert myself more than I had ever in the past.
- The knowledge and experience gained from the professionals at USANA is invaluable and will be useful for the entirety of my future career.

**Acknowledgements**

- Mark Levy Ph.D.
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- Utah State University