Module 2 Assignment

585.651 Immunoenginnering

1. Complete the Excel Worksheet titled “Worksheet 2 – Immune Cell Type”. (10 points)
2. Research more about one of the following communication strategies that immune cells use to communicate with each other: (40 points)
3. Cytokine/Chemokine
4. Major histocompatibility complex (MHC)
5. Complement

As you research, answer briefly (3-5 bullet points for each):

1. What cells participate in this communication (i.e. what cells produce/receive)?
2. What role does this communication play in the immune response?
3. What is the consequence of this communication going awry (i.e. what disease states are associated with ineffective communication)?
4. Are there any therapies targeting this communication?

**Suggested Resources/reading:**

* Janeway Immunobiology or other immunology textbook
* NIAID’s website: <https://www.niaid.nih.gov/research/immune-system-overview>
* British Society for Immunology website: <https://www.immunology.org/public-information/bitesized-immunology>
* Any published literature: Search key terms in Google Scholar
* You can also use online sources (make sure to cite all sources used)

1. Making connections between vaccine design and the immune system response. (30 points)
2. What is an adjuvant and what does an adjuvant mimic?
3. How do adjuvants interact with the immune system?
4. What are some examples of adjuvants?
5. Why do we need adjuvants in vaccines? In what cases do vaccines not require adjuvants and why?

**Suggested Resources/reading:**

* The NIH’s website which is part of your reading assignment will be a good resource: <https://www.niaid.nih.gov/research/vaccines>

1. Develop a multiple-choice question to test someone’s understanding of the immune system. Provide the correct answer and the rationale for why the other answers are not correct. (10 points)