**TH-17 pathway expression in invasive cancer**

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**Abstract**

Cancer is a proliferative mitotic disease that plagues thousands of individuals yearly. Cancer is capable of hijacking normal cells through mutations and suppressing the body's normal signals to prevent malignancy. Five genes along with two isomers of TGFβ were studied for their involvement in the three most invasive forms of cancer (glioblastoma, invasive ductal breast cancer, non-small cell lung cancer) via the TH-17 pathway.

**Background**

Cytokines play an important role in Th17 biological processes. Th17 differentiation is driven primarily by transforming growth factor beta (TGF-β) and interleukin 6 (IL-6) cytokines. Th17 cells release interleukins 17 (IL-17) and interleukin 22 (IL-22) and both cytokines have been implicated in the induction of autoimmune response and inflammatory response. Interleukin 23 (IL-23) has been reported to play an important role in maintenance of Th17 responses. Glioblastoma multiforme (GBM) is the most aggressive brain cancer. The specific role of Th17 and associated cytokines in GBM is yet to be clarified.

**Methods**

- Oncomine microarray was the primary source of data
- Results were taken of specific studies only, discluding cell culture or DNA results.
- All data were based on the median log2 average of normal vs. cancer types.
- Of this pool the mean of all median log2 values was taken and charted on google tables.
- The average of all averages was taken for both studies, as well as a standard deviation and a two tailed T-test was used to determine the statistical relevance of findings.

**Results & future perspectives**

- All resulted in a T-test result of “fail to reject the null hypothesis”
- Insufficient data for NSCL was produced leading to it’s disocclusion of graphs and datum
- This data elucidates the possibility of the genes not being associated in GBM or IDC via the TH-17 pathway
- As new datum continues to be added to Oncomine, the results may vary or further validate seen results.

**References:**

https://www.oncomine.org/resource/login.html;jsessionid=4AEFB066F8153D249817A7839A79C465


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**Glioblastoma datum**

**Invasive ductal breast cancer datum**

**Th17 Pathway map of function**

![Fig.1](image1.png)

![Fig.2](image2.png)

![Fig.3](image3.png)