

Useful web for TCGA data analysis

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1. <http://www.cbioportal.org>

For mutation and correlating genes searching. Provide information on survival, correlation, mutation, etc.

How to use it:

The PDF file attached is the tutorial paper.

The following website is the [Chinese version](#) of it.

<https://www.howsci.com/integrative-analysis-of-complex-cancer-genomics-and-clinical-profiles-using-the-cBioPortal.html>

What a z-score is:

Just remember it's already been normalized.

TCGA states: "For mRNA and microRNA expression data, we typically compute the relative expression of an individual gene and tumor to the gene's expression distribution in a reference population. That reference population is either all tumors that are diploid for the gene in question, or, when available, normal adjacent tissue." (It is not always clear what the cell of origin of a tumor is, so the mRNA expression in normal adjacent tissue can sometimes be misleading, which is why expression is sometimes compared within the set of tumors only).

And this is how they calculated it:

$$z = (\text{expression in tumor sample} - \text{mean expression in reference sample}) / \text{standard deviation of expression in reference sample}$$

2. <http://ualcan.path.uab.edu/index.html>

This is a super easy-to-use website released on 2017 (so it contains the latest data). It contains expression, survival and heatmap!

The advantage of this website is it exhibits the *p value*, so we can use the graph directly. However, the disadvantage is that the graph is kind of ugly.

Here's the tutorial on how to use it:

<http://ualcan.path.uab.edu/tutorial.html> (English)

<https://weitinglin.com/2017/08/18/ualcan> 快速查找 TCGA 基因表現和存活分析的資料庫 (Chinese)

3. <https://www.proteinatlas.org/>

This professional website has all the information about your target protein's expression in normal tissue, cell lines and tumors. Also, it shows the protein's localization in the cell and the specific antibody used for staining. Dig in and you'll find more than you expect.

Here's the tutorial on how to use it (Chinese):

<https://freewechat.com/a/MzAwMzY4MTYxNw==/2655752616/2>

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