Name: Ashika Bangera

Contact: ashika.bangera2001@gmail.com

Mobile: 8431139778

Title: Biological Network and Pathway analysis

1. **Make a co-expression network for the below data.**

DCN	0.597	MGP
DCN	0.416	LYVE1
DCN	0.517	PRELP
DCN	0.72	THBS2
DCN	0.419	TNXB
MGP	0.435	GPX3
MGP	0.447	EFEMP1
IL1A	0.958	CXCL10
IL1A	0.452	OLR1
TNC	0.408	EMILIN1
TNC	0.542	TNXB
MAP1B	0.461	DPYSL3
MAP1B	0.442	DMD
CXCL10	0.475	OLR1
CAVIN2	0.728	CAVIN1
ZBTB16	0.73	GFRA1
PRELP	0.607	THBS2
PRELP	0.459	MFAP4
PRELP	0.429	PODN
PRELP	0.566	FBLN2
SMOC2	0.431	THBS2
CAVIN1	0.644	DMD
LAMC3	0.522	DMD
THBS2	0.47	EFEMP1
THBS2	0.421	FBLN2
EMILIN1	0.432	FBLN2
EFEMP1	0.784	MFAP4
MFAP4	0.73	FBLN2a

Co-Expression Network
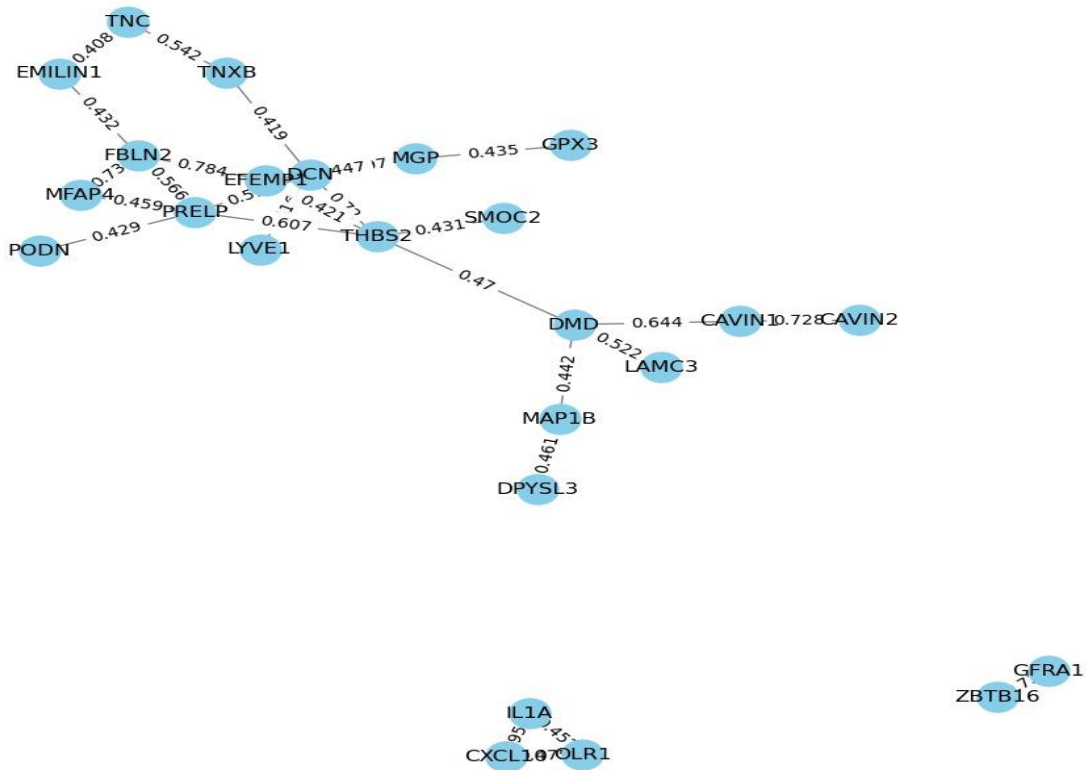
2. What conclusion should be made with respect to an experiment when the significance level is 0.068? In which of the following cases would you use a paired-samples t-test?

    a. When comparing the same participant's performance before and after training.
    b. When comparing two separate groups of people.

Conclusion with respect to the significance level of 0.068:

- The significance level (α) is often set at 0.05 (5%) for most scientific studies. If the p-value of your experiment is 0.068, it is greater than the typical significance level of 0.05.
- Therefore, you **fail to reject the null hypothesis**, meaning there is not enough evidence to conclude that there is a statistically significant effect. While the result may indicate a trend, it is not considered significant at the 0.05 level.

Paired-samples t-test use case:

- A paired-samples t-test is used when comparing two related groups.
- The correct case for using a paired-samples t-test would be: **a.** *When comparing the same participant's performance before and after training.*