

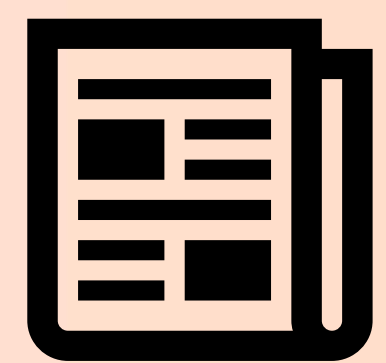
Comparison Of *CLU* And *CD33* Polymorphisms and Expression Levels Between Early-onset And Late-onset Alzheimer's Disease

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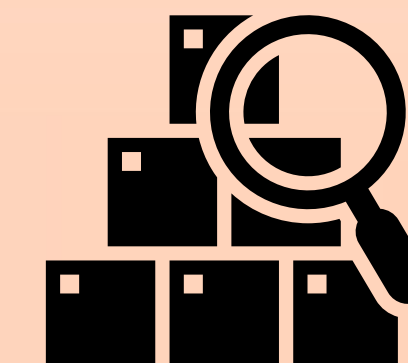
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Background



- Alzheimer's disease (AD) is characterized by amyloid- β (A β) accumulation and chronic neuroinflammation.
- Clusterin (CLU) regulates A β binding, complement activation, and oxidative stress, while CD33 is an inhibitory microglial receptor that suppresses phagocytosis.



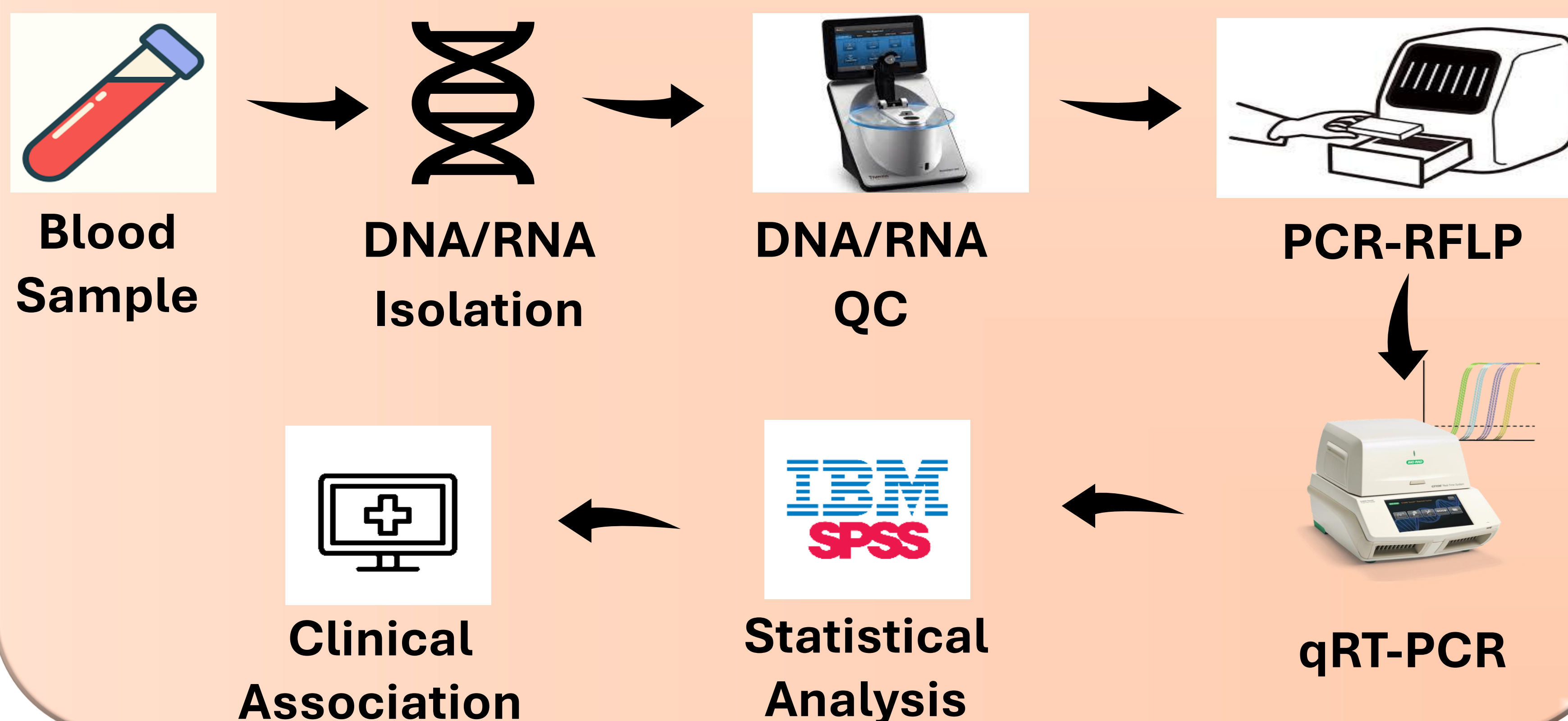
We evaluated *CD33* (rs3865444) and *CLU* (rs11136000) polymorphisms and mRNA expression in early-onset versus late-onset Alzheimer's disease.

Objectives

- This study compared the frequency of SNPs and mRNA expressions of *CLU* and *CD33* genes between AD and controls, as well as between EOAD and LOAD

Methodology

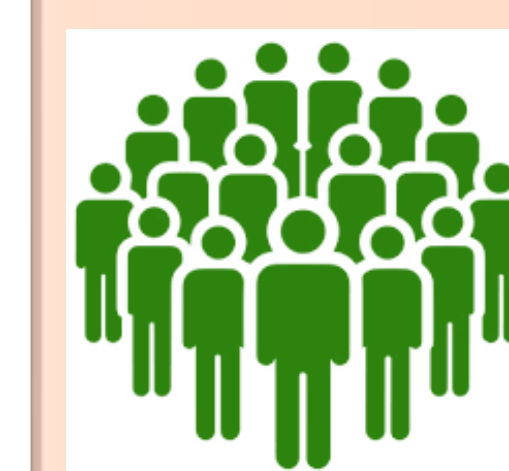
The study was approved by the IEC. 32 AD and 32 healthy controls were recruited for the study. The frequencies of *CLU* (rs11136000) & *CD33* (rs3865444) SNPs were compared between AD and healthy controls. Subsequently, 15 EOAD patients were compared to 17 LOAD patients. Similarly, CLU and CD33 mRNA expression were also compared.



Conclusion

- There was no significant association of *CLU* and *CD33* SNPs with AD, or with EOAD.
- CLU* expression in AD patients was significantly decreased compared to controls, although there was no significant difference in *CD33* expression levels.
- CD33* and *CLU* positively co-regulated, suggesting coordinated regulation of immune-inflammatory pathways. Findings suggesting that lack of functional impact of these SNPs at transcript level in blood.

Cohort Details



Controls n=32

Mean age

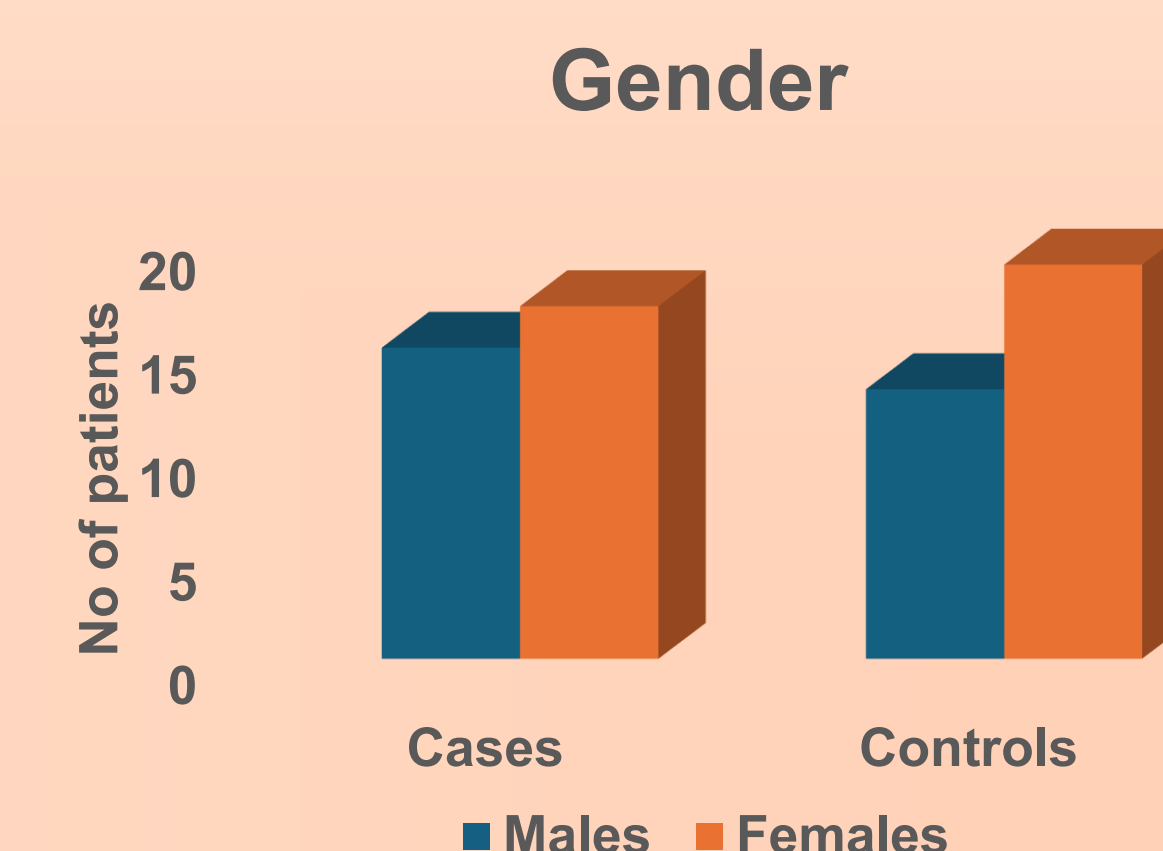
55.27±7.01



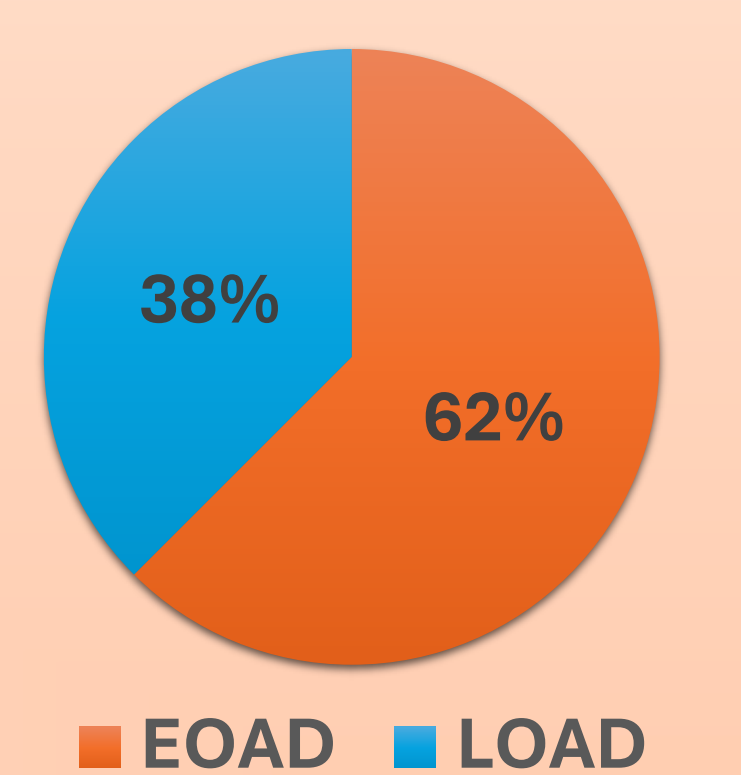
Cases n=32

Mean age

63.18 ± 9.08



EOAD Vs LOAD



Results

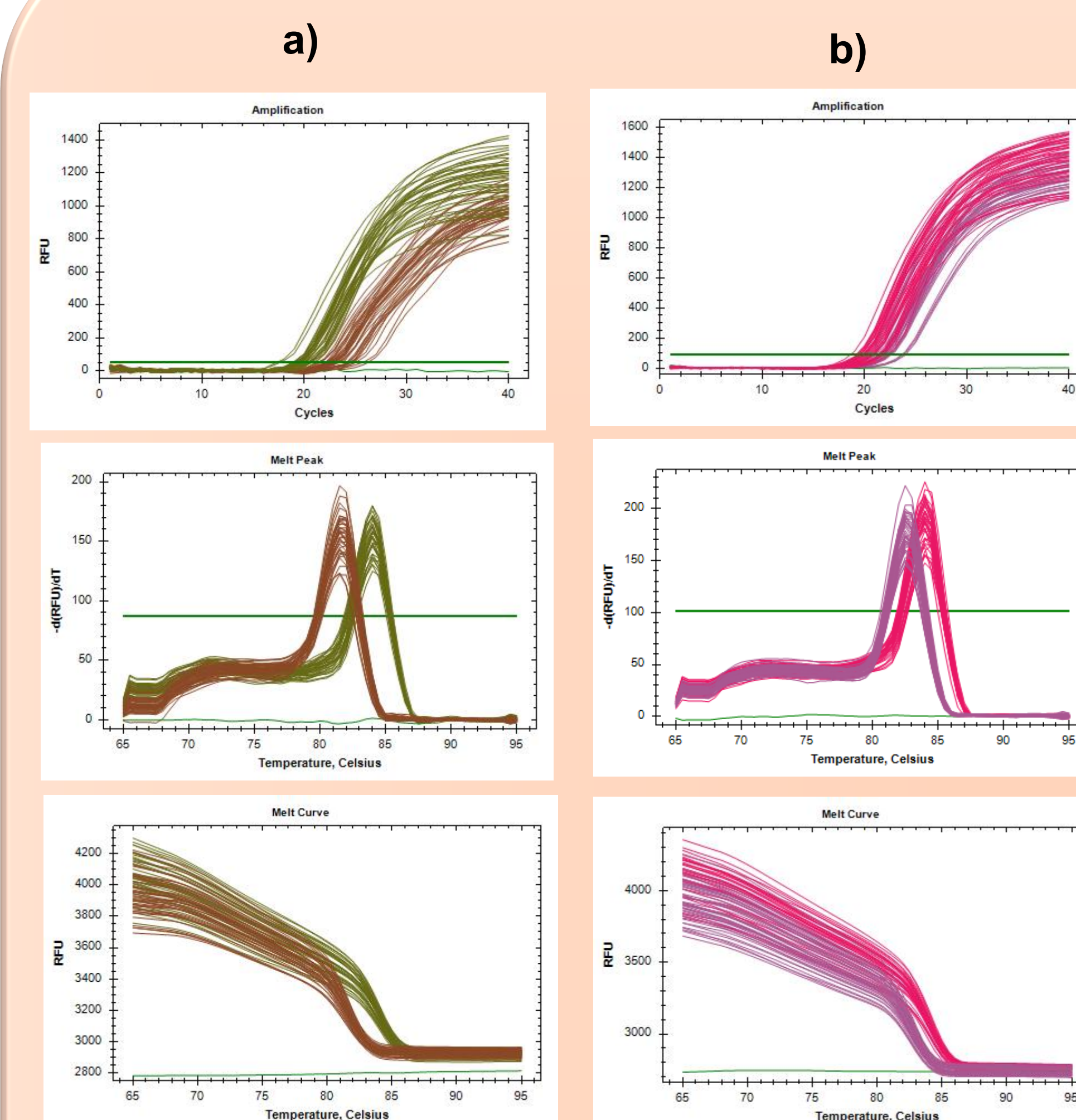


Fig 1: Representing Amplification, Melt curve and Melt peak a) *CD33* and b) *CLU*

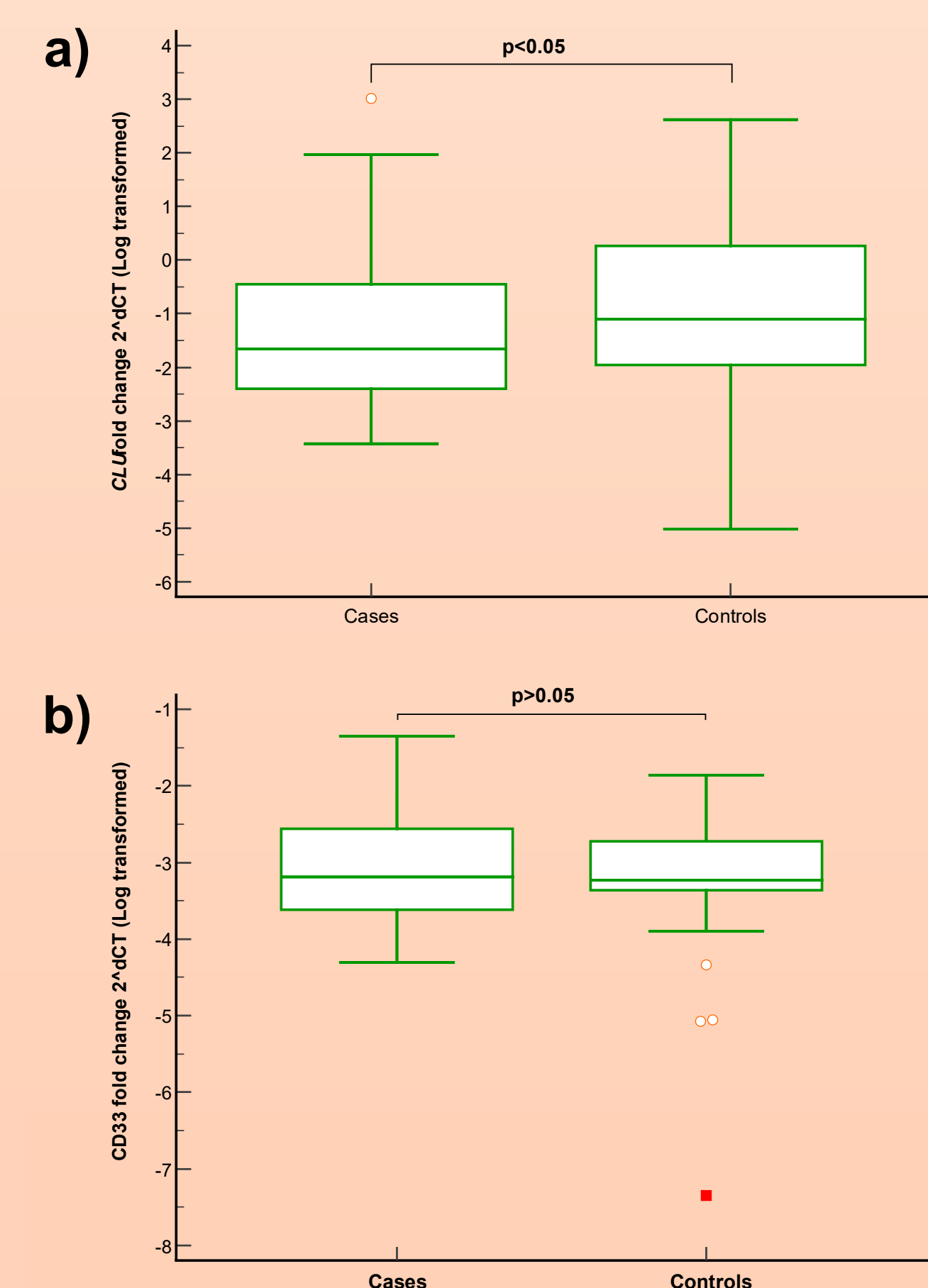


Fig 2: Representing fold change comparison between cases and controls a) *CLU* and b) *CD33*

- CD33* and *CLU* showed decreased expression in 59.37% and 62.5% with a fold change of 0.63 ± 0.17 and 0.50 ± 0.20 , respectively.
- Downregulation of *CD33* and *CLU* was observed in 64.7% and 70.58% of EOAD cases.
- Significant fold change difference of *CLU* between AD and controls while non significant for *CD33*.