

## A Review of Feature Selection Methods Implemented in Neural Stem Cells

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**Abstract :** Neural stem cells (NSCs) are multi-potent, self-renewing cells that generate new neurons. Three subtypes of NSCs can be separated regarding the stages of NSC lineage: quiescent neural stem cells (qNSCs), activated neural stem cells (aNSCs) and neural progenitor cells (NPCs), but their gene expression signatures are not utterly understood yet. Single-cell examinations have started to elucidate the complex structure of NSC populations. Nevertheless, there is a lack of thorough molecular interpretation of the NSC lineage heterogeneity and an increasing need for tools to analyze and improve the efficiency and correctness of single-cell sequencing data. Feature selection and ordering can identify and classify the gene expression signatures of these subtypes and can discover novel subpopulations during the NSCs activation and differentiation processes. The aim here is to review the implementation of the feature selection technique on NSC subtypes and the classification techniques that have been used for the identification of gene expression signatures.

**Keywords :** feature selection, feature similarity, neural stem cells, genes, feature selection methods

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