

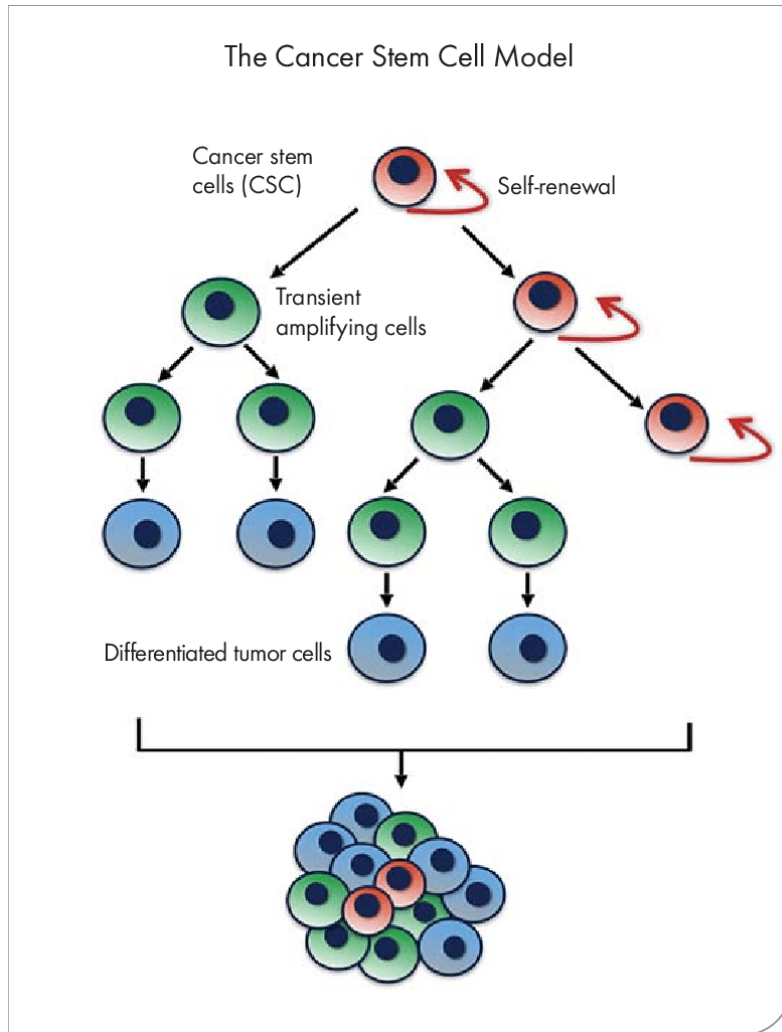
# Comparative Analysis of Public Data Sets to Identify Stemness Markers that Differentiate Liver Cancer Stem Cells

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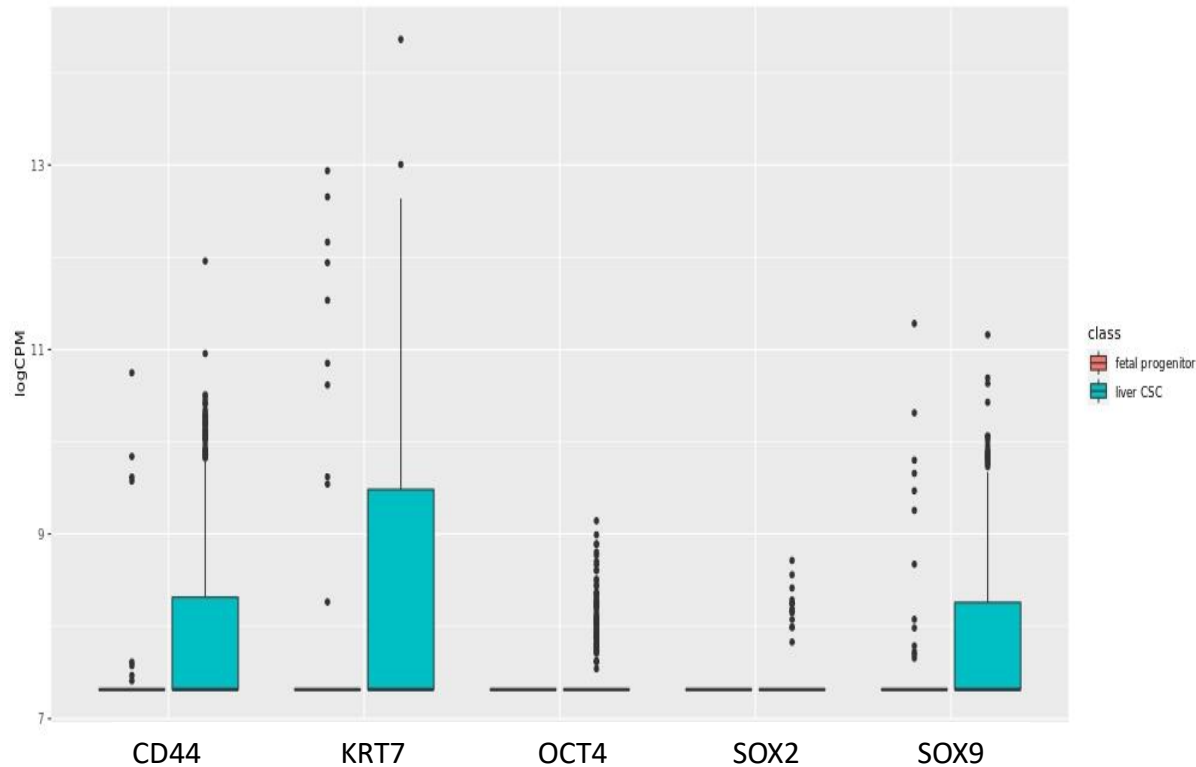
# Cancer Stem Cells



- Growing evidence has implicated cancer stem cells for causing the therapeutic resistance, tumor recurrence, and metastasis.
- Cancer stem cells represent a key target for translational medicine in improving cancer treatment and outcomes.
- It is still not entirely understood how cancer stem cells compare to naturally occurring progenitor cells with regards to expression of stemness factors.



# Comparison of liver cancer and liver progenitors



- Using previously published single-cell RNA-seq data for liver cancer and fetal and adult healthy liver, we reanalyzed 42684 genes across 10865 samples.
- To understand the pluripotency and metastasis potential of cancer stem cells, we compared expression in liver cancer stem cells and fetal liver progenitor cells.
- We find significant over-expression of two Yamanaka factors (Oct4 and SOX2) and 3 stemness factors (CD44, KRT7, SOX9) in liver cancer stem cells.



# Comparison of liver cancer and liver progenitors

GO Term	GO ID	P-value
SRP-dependent cotranslational protein targeting to membrane	GO:0006614	5.5E-14
structural constituent of ribosome	GO:0003735	4.0E-12
translational initiation	GO:0006413	1.9E-11

- Gene ontology analysis of the 248 genes at least 5-fold overexpressed in liver cancer stem cells shows enrichment of protein translation and membrane targeting functions.
- Our results highlight significant differences in the expression of stemness factors between liver cancer stem cells and fetal progenitor cell types that potentially help explain the self-renewal and treatment resistance phenotypes of cancer stem cells.





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Thank you for  
your attention

