


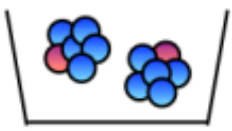
Glycoprotein nmb is exposed on the dormant breast cancer cells and induces stem cell-like properties

**We have identified “cell surface” GPNMB as a novel and potent marker for breast cancer stem cells (CSCs).**

CSCs are thought to be a root cause of cancer metastasis and relapse. So, we should beat CSCs to eradicate cancer.

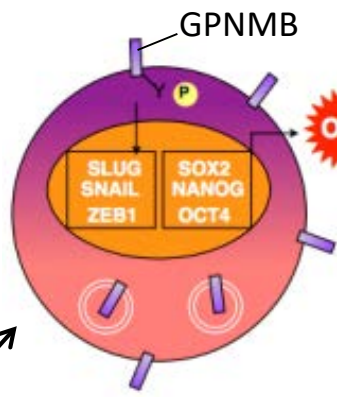
 3D culture and *in vivo* (but not 2D culture) conditions can generate heterogeneity

3D-cultured spheres



*In vivo* tumors

Cell surface-GPNMB<sup>high</sup>



- ▶ High CSC genes
- ▶ High EMT-TF genes
- ▶ Dormancy
- ▶ High sphere forming ability
- ▶ High tumorigenicity

Cell surface-GPNMB<sup>low</sup>



- ▶ Low CSC genes
- ▶ Low EMT-TF genes
- ▶ Rapid proliferation
- ▶ Low sphere forming ability
- ▶ Low tumorigenicity

CSC: cancer stem cell  
EMT-TF: epithelial mesenchymal transition related transcription factor