Cancer Stem Cell Markers

Just as mature cells of the blood, skin, colon, and breast are replenished by a population of tissue-specific stem cells, increasing evidence now suggests that cancers, too, depend on stem cells for continued growth. This notion originated in studies of hematopoietic cell types, where the leukemia stem cell (LSC) was identified by flow cytometric studies. Cancer stem cells have subsequently been identified in solid tumors of the breast and nervous system, suggesting that this phenomenon may be widespread. Importantly, molecules that serve as markers (either singly or in particular combinations) of cancer stem cells have also been discovered, allowing identification, purification, and detailed study of these cells.

R&D Systems offers and supports a wide array of research reagents for the study of cancer stem cells.

Cancer Stem Cell Markers

MOLECULE	ANTIBODIES	PROTEINS	ELISAs/ASSAYS
Hematopoietic Cancer Stem Cell Markers			
BMI-1	H		
CD34	Ca		
CD38	H		
CD90/Thy1	H		
IL-3 Rα/CD123	H M	H M	
MS4A1/CD20	H		
Neprilysin/CD10	H M	H M	H
SCF R/c-kit	H M	H	H
Syndecan-1/CD138	H M		
TfR (Transferrin R)/CD71	H		
Breast Cancer Stem Cell Markers			
BMI-1	H		
CD2	H M		
CD3	H M		
CD31/PECAM-1	H	H M P	
CD44	H	H	
Fcγ RI/CD64	H M	H M	
Fcγ RIII/CD16	H M	H M	
Gli-1	H		
Gli-2	H M		
Integrin β_2/CD18	H M		
Neprilysin/CD10	H M	H M	H
PDGF Rβ/CD140b	H M	H M	H
Nervous System Cancer Stem Cell Markers			
BMI-1	H		
Musashi-1	H		
Nestin	H R		
SOX2	H M		

Key: H Human M Mouse R Rat Ca Canine P Porcine

SOX2 Expression in Teratocarcinoma

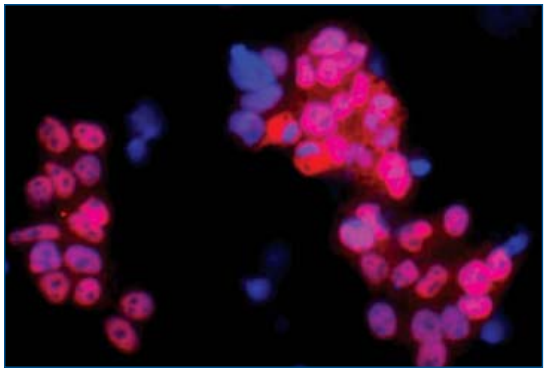

Figure 1. Detection of SOX2 in NTera-2 cells (human teratocarcinoma stem cells) using R&D Systems mouse anti-human SOX2 monoclonal antibody (Catalog # MAB2018; red). The nucleus was counterstained with DAPI (blue). *Image courtesy of Jingli Cai and Mahendra Rao, National Institutes of Health.*

Expression of Nestin in Glioblastoma

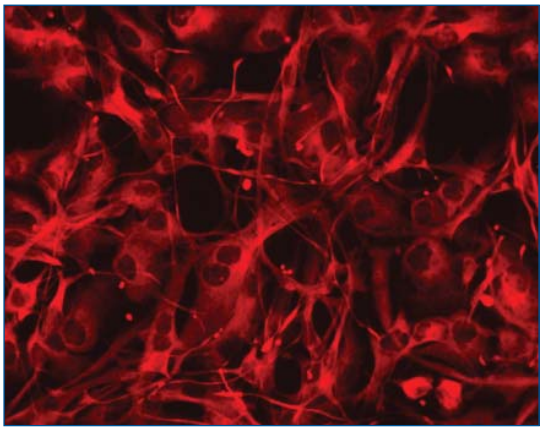

Figure 4. Detection of nestin in human glioblastoma cells using R&D Systems mouse anti-human nestin monoclonal antibody (Catalog # MAB1259). Cells were stained with a rhodamine-conjugated secondary antibody (red).

SCF R/c-kit in TF-1 Cells

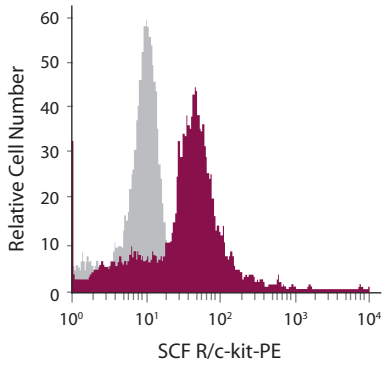

Figure 2. Detection of SCF R/c-kit in TF-1 cells (human erythroleukemic cell line) using flow cytometry. Cells were stained with R&D Systems phycoerythrin (PE)-conjugated anti-human SCF R/c-kit monoclonal antibody (Catalog # FAB332P; red histogram) or isotype control (Catalog # IC002P, light gray histogram).