



SOX2 encodes a transcription factor that directs embryonic stem cell differentiation, proliferation and self-renewal during embryogenesis. The gene also maintains homeostasis of the esophageal, tracheobronchial and gastric linings by regulating epithelial cell genesis and apoptosis. Abnormal expression of SOX2 results in compromised pluripotency, with embryonic stem cells unable to differentiate (in studies on mice, embryos lacking SOX2 reach the blastocyst stage, but die after implantation).<sup>1,2</sup>

SOX2 usually becomes oncogenic via gene amplification. So far, extra SOX2 gene copies have been detected in over 25 malignancies, including breast, colorectal, esophageal, and gastric cancer, as well as multiple lung cancer subtypes. Interestingly, SOX2 expression has been shown to rise with increasing tumor grade in certain cancers (glioblastoma, esophageal and breast), and in prostate cancer, the percentage of SOX2-positive cells grows with increasing Gleason score. High SOX2 is also correlated with increased likelihood of metastasis in certain tumor types, as well as shorter overall survival, higher chance of recurrence, and heightened resistance to chemotherapy. Therefore, SOX2 appears to play a role not only in the beginning stages of tumor development, but also in progression of the disease in its later metastatic phases.<sup>1</sup>

Empire Genomics' SOX2 fluorescent in situ hybridization (FISH) probes can be used to detect SOX2 amplifications. Gene-specific probe comes in sets of 20 and normally ship within 7-10 business days.

PROBE NAME	LOCATION / STS	DYE COLOR	SKU
SOX2 FISH Probe	3q26.33	●	SOX2-20-OR
Chromosome 3 Control Probe	3p11.1	●	CHR03-10-GR

## To View Our SOX2 FISH Probe

visit [www.empiregenomics.com/SOX2](http://www.empiregenomics.com/SOX2) or call (716) 856-3873

1. Wuebben EL, et al. (2017) Oncotarget 8:27-44917.  
2. Morey L, et al. (2015) Molecular and cell bio 35:16; 2716-2728.  
3. Pham DL, et al. (2013) ntl Jour Gynecological Path 32:4; 358-367.