



Sal-like protein 4 (SALL4) is a zinc-finger transcription factor that serves as a master regulator of embryonic pluripotency and is involved in processes associated with stem cell activities. SALL4 expression in germ cells makes it a useful marker for germ cell tumors such as seminoma, embryonal carcinoma, yolk sac tumors and teratomas. SALL4 expression is also seen in the spermatogonia of normal testis.

## Why SALL4

- General marker of germ cell tumors (SALL4+) and differentiation from sex cord stromal tumors (SALL4+)
  - Distinguishes ovarian yolk sac tumor (SALL4+) from clear cell carcinoma (SALL4+)
    - Marker of stem cell-like dedifferentiation in many non germ cell cancers
  - Sensative (~100%) marker for extragonadal yolk sac tumor with strong diffuse staining
    - Rhabdoid tumor (SALL4+) versus epithelioid sarcoma (SALL4+)

## References

- i) Miettinen M, et al. SALL4 expression in germ cell and non-germ cell tumors: a systematic immunohistochemical study of 3215 cases. Am J Surg Pathol. 2014; 38:410-20. 2.
- ii) Yang J, et al. Genome-wide analysis reveals Sall4 to be a major regulator of pluripotency in murine-embryonic stem cells. PNAS. 2008; 105:19756-61.