



ARTICLE LINKS:

[Fulltext](#) | [PDF \(129 K\)](#) | [ArticlePlus](#)

### Paired Overexpression of ErbB3 and Sox10 in Pilocytic Astrocytoma.

#### Original Articles

Journal of Neuropathology & Experimental Neurology. 65(8):769-775, August 2006.

*Addo-Yobo, Steven O. BA; Straessle, Jennifer BS; Anwar, Adil PhD; Donson, Andrew M. BSc; Kleinschmidt-DeMasters, B. K. MD; Foreman, Nicholas K. MBChB*

#### Abstract:

Pilocytic astrocytoma (PA) is the most common glioma of childhood. Despite their relatively high incidence, the molecular mechanisms responsible for tumorigenesis and growth of PA are poorly understood. Previous in vitro studies in our laboratory showed that despite the absence of ErbB1, PA was sensitive to ErbB1 tyrosine kinase inhibitor gefitinib. To identify alternative targets of gefitinib in PA, we studied other members of the ErbB receptor tyrosine kinase family that have been identified in brain tumors. Using gene expression microarray and Western blot analyses, we found that ErbB3 is highly overexpressed in PA compared with other pediatric brain tumors (glioblastoma, ependymoma, medulloblastoma, atypical teratoid/rhabdoid tumor, and choroid plexus papilloma). Developmental biology studies have identified Sox10 as a regulator of ErbB3 expression during development of the neural crest. Investigation of Sox10 in PA revealed that it is highly overexpressed relative to other pediatric brain tumors, lending support to the theory that Sox10-regulated overexpression of ErbB3 may be driving growth in PA. Sox10-regulated ErbB3 overexpression is a novel insight into the biology of PA, suggests possible recapitulation of developmental pathways in tumorigenesis, and presents possible targets for therapeutic intervention that might be used for hypothalamic variants not amenable to surgical cure.

(C) 2006 American Association of Neuropathologists, Inc

---

Copyright © 2006, American Association of Neuropathologists, Inc. All rights reserved.  
Published by Lippincott Williams & Wilkins.  
[Copyright/Disclaimer Notice](#) • [Privacy Policy](#)  
[XML](#) [Subscribe to RSS feed](#)