Abstract

The loss of Pten function results in macrocephaly and autism. We have been exploring the role of Pten in the genesis of normal neural stem cells. Genetic deletion or inactivation of Pten via reactive oxygen species can produce enhanced neural stem cell production. In the developing mouse fetus, maternal inflammation activates NADPH oxidase, which then activates reactive oxygen species, producing enlarged brains and many behavioral phenotypes similar to those found in autistic individuals. Surprisingly, we find that many of these behaviors can be temporarily reversed by pharmacologic treatment.

