ABSTRACT
AER, vibrissal placodes, and proliferating stem cell populations that produce multiple differentiated tissues (tail bud mesenchyme, pharyngeal endoderm and meSenchime) are among the sites where Gad1 expression occurs, with changes in GABA signaling activity being observed in these tissues.

INTRODUCTION
This paper has addressed a question that has been raised regarding the genetic basis of the 'hyperphosphorylation' of the glutamate decarboxylase gene in the development of neurodevelopmental disorders. This has been suggested by the discovery of a gene encoding a transmembrane protein that encodes a key enzyme in the biosynthesis of glutamate in the brain. The glutamine decarboxylase gene (GADc) encodes a transmembrane protein that catalyzes the biosynthesis of glutamate in multiple non-neural tissues including the brain. The glutamine decarboxylase gene (GADc) encodes a transmembrane protein that catalyzes the biosynthesis of glutamate in multiple non-neural tissues including the brain. The GADc gene In the early stages of neuronal growth, GABA can modulate neural progenitors, as well as their migration, survival, and differentiation. Glutamate decarboxylase (GAD) plays a crucial role in this process by triggering GATA-mediated signaling during its formation and postnatal development. We have some interesting genetic evidence that suggests a GABA-mediated development pathway, known as the secondary palate, may play'significant roles in the early development of non-neural tissues'. In particular, we have compared the distribution patterns of Gad1 transcripts in different regions and tissues using whole mount in situ hybridization to identify several important areas where Gadur1 might be expressed: specialized ectodermal structures that are involved in developing the mystacial vibrissae and limb outgrowth, including the mesenchymal stem cells

CONCLUSION
Remarkable conclusions In mouse embryos from E9.0-E14.5, the expression of Gad1, the 67 kDa isoform of glutamate decarboxylase (Gad1), occurs in the tail bud mesenchyme, vibrissal placodes, pharyngeal arches and pouches as well as the AER, mesenthal arbones and ectoderm of the buds, while other sites of expression are known to give rise to differentiated tissues.