

Origins of Aesthetic Sense Unraveled from Subplate Neurons

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It is essential to understand how the mechanisms that respond to various stimuli from the outside world develop from the fetal to the neonatal period to understand the origin of the sense of beauty. Predictably, the neural circuits for perceiving beauty are formed in an “experience-dependent developmental process,” in which postnatal experiences stimulate neural circuits. However, neural circuits that develop *in utero*, even with limited sensory input from the outside world, are believed to be mediated by the spontaneous electrical activity of SpNs, the first neurons to be born and mature in the cerebral cortex. SpNs are the first born and mature neurons that play an essential role in neuronal migration and induction of thalamocortical axons during embryonic development. In this study, our first objective was to elucidate the mechanism of constructing basic neural circuits to create human aesthetics through functional analysis of SpNs. By identifying marker genes in SpN during the embryonic period and manipulating spontaneous neural activity, we investigated the essential characteristics of SpN. Furthermore, we explored the role of SpNs in the brain evolutionary process of sensory. We also discussed how the development of input circuits changes, with and without SpN, during brain evolution.