Video Article

Organotypic Slice Culture of E18 Rat Brains

Laura Elias, Arnold Kriegstein
Institute for Regeneration Medicine, University of California, San Francisco

Correspondence to: Laura Elias at EliasL@stemcell.ucsf.edu

URL: <http://www.jove.com/index/Details.stp?ID=235>

DOI: 10.3791/235

Citation: Elias L., Kriegstein A. (2007). Organotypic Slice Culture of E18 Rat Brains. JoVE. 6. <http://www.jove.com/index/Details.stp?ID=235>, doi: 10.3791/235

Abstract

Organotypic slice cultures from embryonic rodent brains are widely used to study brain development. While there are often advantages to an in-vivo system, organotypic slice cultures allow one to perform a number of manipulations that are not presently feasible in-vivo. To date, organotypic embryonic brain slice cultures have been used to follow individual cells using time-lapse microscopy, manipulate the expression of genes in the ganglionic eminences (a region that is hard to target by in-utero electroporation), as well as for pharmacological studies. In this video protocol we demonstrate how to make organotypic slice cultures from rat embryonic day 18 embryos. The protocol involves dissecting the embryos, embedding them on ice in low melt agarose, slicing the embedded brains on the vibratome, and finally plating the slices onto filters in culture dishes. This protocol is also applicable in its present form to making organotypic slice cultures from different embryonic ages for both rats and mice.

References