

[ABSTRACT]

PLANAR PATCH CLAMP DEVICE, ELECTRODE SECTION FOR THE
DEVICE, AND CELL ION CHANNEL CURRENT MEASUREMENT METHOD

An object of the present invention is directed to
reducing a noise current by suppressing variations in an
applied membrane potential in the planar patch clamp
5 device, thereby enabling accurate measurement of an ion
channel current.

A planar patch clamp device comprising: an
electrically insulative substrate having at least one
fine through holes; a liquid reservoir and an electrode
10 unit disposed on each of surfaces of the through-hole are
configured so that the liquid reservoir retains a
conductive liquid and the electrode unit is electrically
communicate with the liquid reservoir, wherein the
electrode comprises (a) an electrode vessel, wherein at
15 least part of a vessel wall is made of an inorganic
porous material, (b) an electrode in which a chloride
(NmCl) layer is formed on the surface of a noble metal
(Nm), and (c) an electrode solution containing (NmCl) and
an alkali metal chloride being dissolved at a saturated
20 concentration, is disclosed.

Fig. 1