

单通道全自动膜片钳系统 Port-a-Patch[®]小夺天工



Port-a-Patch[®] NPC[®]-1

nanji[on]

Port-a-Patch® 享受电生理科学

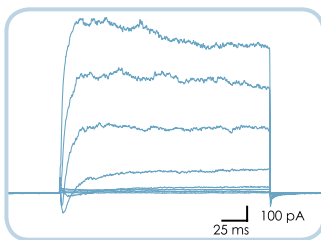
- 高质量且更高通量的实验数据
- 无操作经验亦可轻松使用
- 高成功率，长时程的稳定全细胞记录
- 多种灌流模式
- 兼容多种膜片钳放大器
- 全细胞和单通道记录模式
- 适用于多种原代细胞
- 电压门控和配体门控通道
- 超低噪音的脂双层记录
- 全自动内、外灌流和温度控制

Port-a-Patch®是目前最小的膜片钳系统。无论操作者有无膜片钳使用经验，均可以快速完成实验，获得高质量的数据。它已经记录到了多种细胞系表达的大量离子通道，且适用于多种原代细胞。Port-a-Patch®是一个全能的电生理实验设备，对于学习使用膜片钳的用户而言非常容易上手。它可以进行高质量的数据测量，可达到千兆级的高阻封接，并具有极高的成功率。其记录模式有全细胞模式、穿孔模式以及细胞贴附式模式。

Port-a-Patch®使用的是平板硼硅玻璃芯片式记录电极(NPC®-1)。通过其上1-2微米的小孔对细胞进行封接和记录，细胞在负压的作用下，被芯片捕获、封接和破膜，实现全细胞记录。完备的配件：包括内、外灌流器，温度控制器，以及荧光显微镜适配片；丰富的拓展功能使Port-a-Patch®在离子通道研究中表现的非常实用和灵活。虽然Port-a-Patch®和EPC-10放大器是推荐配置，但它可以和市场上大多数放大器兼容。

实验数据

Primary BK / Ca_v



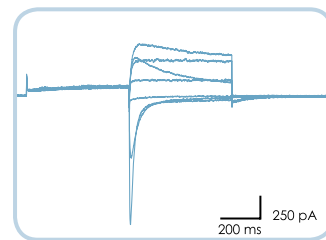
可成功应用于:

原代细胞 (离子通道):

Hippocampal Granule (BK/Ca_v), hSynoviocytes (TRPC)*, rAstrocytes (K⁺)*, hNeutrophils (K⁺)*, hVascular smooth muscle cells (TRPC)*, hT-lymphoblasts (K⁺)*

*Nature Protocols, 2009, 4(2), 244-255

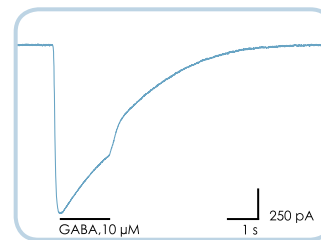
HEK - hERG



其他电压门控通道:

Na_v1.2, Na_v1.5, Na_v1.7 and other Na_v's, hEAG, K_v1.3, K_v1.5, Shaker, and other K_v's, Ca_v3.1 and other Ca_v's

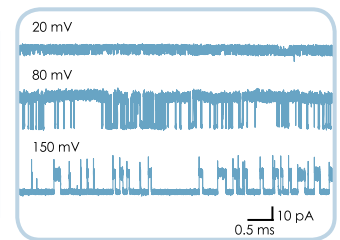
HEK - GABA_A



其他配体门控通道:

GABA_A, hGlyRα1, P2X7, CNG, HCN, ASICs, TRPV1, TRPA1, TRPC, TRPM2, TRPM3, TRPM8 etc.

Bilayer - IP₃



其他单通道记录:

K_v1.2, IP₃, OmpF, MscL, bacterial cytolysin, gramicidin, alamethicin, connexins (Cx26, Cx43), NaChBac, KcsA, K_{csA}1.1 etc.

芯片电阻:	2 - 3.5 M Ω (芯片电阻可定制)
封接电阻:	> 1 G Ω
全细胞电阻:	> 1 G Ω
串联电阻:	< 10 M Ω
最少液体消耗:	~ 30 μ l/compound
外灌流时间常数 (全自动外灌流系统):	~ 100 ms
内灌流时间常数:	~ 5 sec
全细胞模式平均稳定记录时间:	~ 20 min
全细胞记录成功率:	70 - 90 % (细胞系)
通量:	20-50 数据点/天

技术规格

标配的Port-a-Patch®系统包括：

- Port-a-Patch®工作站 (包括法拉第盖)
- 负压控制器, USB控制 (无需外加真空设备)
- 维护套装
- 电生理记录溶液套装
- 500个NPC® -1 芯片
- PatchControl软件 (Windows系统), 包括先进的图形日志记录工具
- EPC-10放大器, 兼容其他多种放大器
- 台式机或笔记本电脑
- 现场安装和培训

配件:

- Port-a-Patch®外灌流系统 (带有灌流槽)
- Port-a-Patch®内灌流系统
- Port-a-Patch®温度控制器
- Port-a-Patch®显微镜适配片 (供荧光测定)



规格:

- Port-a-Patch®工作站:
体积(长 x 宽 x 高): 17.5 x 9 x 7.5 cm
重量: 1.4 kg
- Port-a-Patch®负压控制器:
体积(长 x 宽 x 高): 13 x 9 x 7.5 cm
重量: 1kg

"The Port-a-Patch is a state-of-the-art automated patch clamp platform that allows trainees at Hydra without prior experience in electrophysiology to quickly learn how to generate high quality patch clamp recordings. It substantially speeds up the teaching process as well as giving us an easy-to-use platform for efficient, accurate screening of ion channel active compounds."

Chris Fanger, Director of Lead Discovery, Hydra Biosciences, Boston, MA, USA

"The Port-a-Patch enables students and young researchers lacking formal training in electrophysiology to rapidly generate research grade data. Within the courses given at the Institute for Biomolecular Systems and Bioelectronics, the students gain hands-on experience in basic membrane biophysics and electrophysiology, which is of great value for their education."

Professor Simmel, Technical University of Munich, Munich, Germany

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