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Protocol status: Working
We use this protocol and it's working

Preparation of Recording ACSF (artificial cerebrospinal fluid) for slice electrophysiology

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ABSTRACT

Hnasko lab- preparation of Recording ACSF
Recording ACSF is used for incubating brain slices during cell-attached or whole-cell electrophysiological recordings of neurons.

MATERIALS

NaCl (Fisher Scientific, cat# BP358)
KCl (Fisher Scientific, cat# BP366)
NaH_2PO_4 (Fisher Scientific, cat# BP329)
D-glucose (Sigma Aldrich, cat# G8270)
$CaCl_2$ (Fisher Scientific, cat# BP510)
$MgSO_4$ (Fisher Scientific, cat# M80)
$NaHCO_3$ (Fisher Scientific, cat# BP328)
HCl (Fisher Scientific, cat# A481-212)

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1 Prepare 10X stock solution.

1.1 Composition of 1 L of 10X Recording ACSF (in mM): 1250 NaCl, 25 KCl, 12 NaH_2PO_4, 125 d-glucose, 20 $CaCl_2$ and 20 $MgSO_4$.

1.2 Composition of 1 L of 10X Recording ACSF (in g): 73.05 NaCl, 1.86 KCl, 1.44 NaH_2PO_4, 22.52 d-glucose, 2.94 $CaCl_2$ and 4.93 $MgSO_4$.

2 Dissolve all salts in 1 L of ddH_2O to make 10X stock solution of Recording ACSF.

3 Dilute 10X solution to 1X for use in experiments.

3.1 Dilute 100 mL of 10X solution to ~ 800 mL with ddH_2O and add (in mM): 26 $NaHCO_3$; (in g): 2.18 $NaHCO_3$.

3.2 Add ddH_2O to final volume of 1 L.

4 Bubble the solution with carbogen (95% O_2 5% CO_2) for ~10 min.

5 After bubbling, measure and adjust pH of solution to ~ pH 7.3 with 12 N HCl (<1 ml).

6 Refrigerate until use.