
Product Data Sheet

Product Name: ACSF
Cat. No.: GC11850

Chemical Properties

Cas. No.

Formula $C_{20}H_{20}N_2O_2$ M.Wt 320.38

Solubility Soluble to 5 mM in ethanol with gentle warming Storage Store at RT

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

Background

ACSF is often used as replacement of CSF for perfusion of brain slices to preserve interneurons [1].

ACSF (artificial cerebrospinal fluid) is invented to reduce the incidence of cerebral edema and further suppress brain cell disorders. And ACSF is often used as an irrigation fluid or perfusion fluid in the field of neurosurgery, such as intracranial surgery, or when used as a replenishing fluid for lost cerebrospinal fluid. ACSF is also used to maintain pH balance and tissue oxygen delivery for research [2, 3].

ACSF is often used to maintain oxygen supply in the study of basic characteristics of neuronal function where acute in vitro brain slice models are required. When tested with neocortical mouse slices, carbogenated ACSF treatment could keep pH balance and tissue oxygen delivery; otherwise, seizure-like events were occurred in the slices with no-magnesium ACSF treatment [1]. In the study of targeted drugs for protect neuron, ACSF is often to treat the mice and worked as a control to calculate the drug efficiency [3]

It is also reported in the rat brain slice model, treated with ACSF, a replacement of human CSF, could powerfully boost spontaneous firing of CA1, CA3 and layer 5 pyramidal neurons [4].

References:

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

- [1]. Voss, L.J., S.A. George, and J.W. Sleight, *Testing neocortical slice viability in non-perfused no-magnesium artificial cerebrospinal fluid solutions. J Neurosci Methods, 2012. 204(2): p. 273-5.*
- [2]. Liu, D. and F. Bao, *Hydrogen peroxide administered into the rat spinal cord at the level elevated by contusion spinal cord injury oxidizes proteins, DNA and membrane phospholipids, and induces cell death: Attenuation by a metalloporphyrin. Neuroscience, 2015. 285: p. 81-96.*
- [3]. Gruber, R.C., et al., *Targeted GAS6 delivery to the CNS protects axons from damage during experimental autoimmune encephalomyelitis. J Neurosci, 2014. 34(49): p. 16320-35.*
- [4]. Bjorefeldt, A., et al., *Human cerebrospinal fluid increases the excitability of pyramidal neurons in the in vitro brain slice. J Physiol, 2015. 593(1): p. 231-43.*

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA