FEB 22, 2019

🌐 Glutaraldehyde fixation

Veronika Cencen¹

¹EPFL - EPF Lausanne

Veronika Cencen

ABSTRACT

Fixation of adherent mammalian cells for AFM imaging

GUIDELINES

Prepare adherent cell culture on glass coverslips

MATERIALS

MATERIALS

⊗ Glutaraldehyde, 25% solution **Bio Basic Inc. Catalog #GC3870.SIZE.500ml**

STEP MATERIALS

⊗ PBS **Contributed by users**

SAFETY WARNINGS

OPEN ACCESS

DOI:
dx.doi.org/10.17504/protocols.io.ycgfstw

Protocol Citation: Veronika Cencen 2019. Glutaraldehyde fixation . **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.ycgfstw>

License: This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

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

Created: Feb 20, 2019

Last Modified: Feb 22, 2019

PROTOCOL integer ID:
 20584

Glutaraldehyde requires a high degree of caution, even at low concentration! Carefully read SDS before use!

Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 4), H332 Skin corrosion (Sub-category 1B), H314 Serious eye damage (Category 1), H318 Respiratory sensitisation (Category 1), H334 Skin sensitisation (Category 1), H317 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335 Short-term (acute) aquatic hazard (Category 1), H400 Long-term (chronic) aquatic hazard (Category 2), H411

Refer to SDS for details

Side effects include skin irritation.^[4] If exposed to large amounts, nausea, headache, and shortness of breath may occur.^[3] [Protective equipment](#) is recommended when used.^[3] Glutaraldehyde is effective against a range of [microorganisms](#) including [spores](#).^{[3][6]} As a strong sterilant, glutaraldehyde is [toxic](#) and a strong irritant.^[15] There is no strong evidence of [carcinogenic](#) activity.^[16] Some occupations that work with this chemical have an increased risk of some cancers.^[16]

BEFORE START INSTRUCTIONS

Ensure proper disposal container is available in the area

Perform entire procedure in ventilated fumehood, disinfect workspace and tools with ethanol

Use gloves and eye protection (fumehood should be sufficient to prevent inhalation so a mask is not required)

- 1 Rinse cells 3 times with appropriate buffer, such as PBS or Ringer's

PBS Contributed by users

- 2 Prepare **[M] 2 Mass / % volume** concentration glutaraldehyde in KMgH buffer (or other buffer used for your application). Pipette just enough of the dilution on top of the rinsed cells to cover the

Glutaraldehyde chemical formula

area. Let sit for 00:20:00

<http://publish.uwo.ca/~jkiernan/formglut.htm>

- 3 Rinse at least 3 times with buffer, properly disposing of the diluted glutaraldehyde.

Expected result

Glutaraldehyde is appropriate for whole and unroofed cell fixation, so up to 100% should be fixed with decent crosslinking. For thicker samples use an addition of paraformaldehyde

Safety information

Use sodium hydroxide for deactivation if necessary

http://msdssearch.dow.com/PublishedLiteratureDOWCOM/dh_0936/0901b80380936cd5.pdf?filepath=microbial/pdfs/noreg/253-03304.doc&fromPage=GetDoc