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*Tips and tricks of the trade*

# Cool Glove Trick Keeps your Fingers Warm

Everyone handling liquid nitrogen is familiar with that horrible feeling if the  $-196^{\circ}\text{C}$  cold liquid seeps through to the fingers, freezing them to ice. There are, however, various tricks to avoid frostbitten fingertips.

**Kenneth Berendzen studies the function and regulation of bZIP and two-component-system transcription factors in plants. Working on transcription factors and gene expression implies that a lot of plant cells have to be crushed open for RNA extraction. That's the point where liquid nitrogen comes into play, since some plant cells require freezing and grinding in liquid nitrogen in order to disrupt them. To avoid frostbite while handling liquid nitrogen and frozen probes, Berendzen protects his hands with a simple trick.**

### Lab Hint

**H**ave you ever had to handle a lot of probes that were frozen in liquid nitrogen, all of which had to be dealt with through, and despite wearing gloves, your fingers still felt like they were going to freeze off? Well, here is a very simple solution. Typically, one might work with a cotton glove covered with a latex glove. While this works initially, when finished it feels like no gloves were worn at all! There is a very simple explanation for this: as your hand sweats into the cotton



Three layers of latex, cotton and latex prevent your fingertips from frostbite.



Knows a simple trick against icy fingers:  
Kenneth Berendzen.

glove, the very cold temperature of liquid nitrogen cools down enough to freeze the sweat in your cotton glove. Therefore, place a latex glove under the cotton glove to prevent your sweat from entering the cotton glove. In the end you will have three layers: latex, cotton, latex, which will not only protect your cotton glove from getting wet and freezing but also keep your hand warm (see illustration). Of course, this is not a license to go and immerse your hands in liquid nitrogen! This technique does, however, allow you to work comfortably, but safely, with frozen material (tubes) and is especially helpful for grinding material with a pestle and a mortar.

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**Do you have any useful tips?**

**Contact us at:**

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