Negative Protein Staining with Zinc and Imidazole

On the day, prepare 200 ml of each:

Solution I: 0.2 M imidazole, 0.1% SDS

Solution II: 0.2 M zinc sulfate

After electrophoresis, gently shake the gel in distilled/MQ water for 30-60 seconds

Pour off the water, pour on solution I, shake gently for 5 minutes (for 5%-10% acrylamide gels) or 10 minutes (10%-15% acrylamide gels)

Pour off solution I and pour on solution II, shake gently for 1-2 minutes, protein bands will appear transparent against an opaque background

Stop the staining by washing the gel with distilled/MQ water

The stained gel can be stored in water for days or weeks

Sensitivity is similar to Coomassie staining but is completely reversible and the proteins are reversibly fixed in the gel.

To destain and unfix the proteins, incubate the gel / gel segments in Laemmli running buffer (75 mM Tris HCl, 192 mM glycine, 0.1 % SDS) for 15-30 minutes, until the background becomes transparent again.

>From Ute Boronowski 2000