

Supplementary Material. The MIAPE-GE glossary (MIAPE-GE version 1.4).

<i>Classification</i>	<i>Definition</i>
<i>1. General features</i>	
1.1.1 Date stamp	The date on which the work described was initiated; given in the standard 'YYYY-MM-DD' format (with hyphens).
1.1.2 Responsible person or role	The (stable) primary contact person for this data set; this could be the experimenter, lab head, line manager <i>etc.</i> Where responsibility rests with an institutional role (<i>e.g.</i> , one of a number of duty officers) rather than a person, give the official name of the role rather than any one person. In all cases give affiliation and stable contact information, which consists of (i) Name, (ii) Postal address and (iii) Email address.
1.1.3 Electrophoresis type	The gel electrophoresis type; <i>e.g.</i> , two-dimensional or one-dimensional.
<i>2. Sample - The sample preparation should be documented in a MIAPE compliant manner and referenced from here.</i>	
2.1.1 Sample name(s)	Name of sample(s) including any label, marker or tag applied that will be used for protein detection, such as radiolabels or fluorescent labels (by name only). From the sample described above identify control, standard and test samples.
2.1.2 Loading buffer	The components, with concentrations (excluding the sample) of the loading buffer that is to be loaded onto the gel matrix. In case of more than one loading buffer for the same dimension, describe one loading buffer for each sample.
<i>3. Gel matrix and electrophoresis protocol – 3.1 Dimension details</i>	
3.1.1 Ordinal number for this dimension	If this is a one-dimensional gel then the dimension is "First". For a two-dimensional gel there will be descriptions for the first dimension gel matrix "First" and the second dimension gel matrix "Second".
3.1.2 Separation method employed	Name of the separation technique employed for this particular dimension; <i>e.g.</i> , isoelectric focusing (IEF), Sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE), Non-equilibrium pH gradient electrophoresis (NEpHGE).
<i>3. Gel matrix and electrophoresis – 3.2 Gel matrix</i>	
3.2.1 Description of gel matrix	Gel matrix being used for this dimension. Include the descriptive name of the matrix (<i>e.g.</i> , IPG strip, slab gel) and the type of the matrix used for this dimension (<i>e.g.</i> , a native gel, denaturing gel, gradient gel, <i>etc.</i>). State whether the matrix is composed of more than one kind of gel and name the parts (<i>e.g.</i> , stacking gel). Give the dimensions of the matrix and associated parts, under the physical dimension section, below.

3.2.2. Gel manufacture	<p>If the gel was purchased pre-cast, then include the model name, model number, batch number and manufacturer. If the gel has been manufactured 'in house' then a reference to published protocol should be given. If no published protocol is available a recipe should be given.</p>
3.2.3 Physical dimensions	<p>The physical dimensions of the gel matrix and of any sub-matrices described in section 3.2.1. The measurements must be in the form of the Cartesian Coordinate system (x,y,z). According to the standard image orientation described in section 7.1.6, x represents the distance from the anode (+) to the cathode (-). For example in an IPG strip x = the strip length, for a standard slab gel, y = the width. z = the matrix depth.</p>
3.2.4 Physicochemical property range and distribution	<p>As applicable, the details of the pH distribution of the matrix, including the overall pH range of the gel, if known. Details of the molecular weight distribution of matrix with appropriate measurement unit. Examples include linear pH 4-7, logarithmic apparent molecular mass 200-10 kDa.</p>
3.2.5 Acrylamide concentration	<p>The acrylamide concentration of the gel, or each matrix as described in section 3.2.1. In the form of a single percentage (1%) or gradient (1-2%). For gradients include the gradient distribution if appropriate, (<i>e.g.</i>, fixed, stepped or linear).</p>
3.2.6 Acrylamide : Crosslinker ratio	<p>The acrylamide to crosslinker ratio of the gel, or parts described in 3.2.1 (Name of crosslinker and ratio described as "acrylamide : crosslinker").</p>
3.2.7 Additional substances in gel	<p>The details of any additional substances or reagents contained within the gel (not given in section 3.2.2), recording the concentration or molarities for each (and pH if appropriate).</p>
3.2.8 Gel lane	<p>The number of lanes on the gel matrix.</p>
3.2.9 Sample application	<p>Description of the sample (referenced from section 2.1.1) as applied to the matrix, giving:</p> <ol style="list-style-type: none"> 1. Name of sample (reference 2.1.1) 2. Volume of loading buffer (reference 2.1.2) 3. Sample loaded per lane (if applicable for quantification, in SI measurement) 4. Lane designation (as defined in section 3.2.8) <p>Include a description of how the sample was applied to the matrix; <i>e.g.</i>, well loading, rehydration loading, cup loading <i>etc.</i> If the sample is applied using the cup-loading method also state the application point as either anode or cathode.</p>
<p><i>3. Gel matrix and electrophoresis — 3.3 Protocol. If the protocol is a MIAPE compliant published protocol then provide a reference to the appropriate protocol(s). If no published protocol is available then record the running conditions as outlined</i></p>	
3.3.1 Buffer	<p>Description of the running buffers used in terms of name of buffer, components with concentrations. State if this is the anode or cathode buffer (if appropriate).</p>

3.3.2 Electrophoresis conditions	The running conditions applied to the gel described in 3.2. To be given in terms of voltages versus time/kilovolt hours, (or appropriate measurements) and temperature. Include voltage mode profile (step and hold, or gradient).
<i>4. Inter-dimension Process — 4.1 Protocol (not applicable for one-dimensional gel electrophoresis). This section is used to record any process or processes applied to, or carried out between the dimensions described in section 3. This includes processes such as equilibration, reduction and alkylation. If the protocol is MIAPE compliant and published then provide a reference to the appropriate protocol(s) in the standard manner. If no published protocol is available then record the running conditions as outlined</i>	
4.1.1 Step name	A descriptive name of the steps involved in the inter-dimension process. For example, equilibration, or reduction and alkylation.
4.1.2 Inter-dimension buffer	The details of the buffer should be recorded with name, components and concentrations.
4.1.3 Additional reagents	Any additional reagents used should be recorded with name, components, and concentrations. For example, reduction and alkylation agents.
4.1.4 Equipment	Record the Model Name, Model Number and Manufacturer for specialized equipment (note that equipment such as glassware and shakers should not be included unless deemed integral to the result).
4.1.5 Protocol	For the steps named above including, duration and temperature, if appropriate.
<i>5. Detection (if applicable) — this section documents the process and the methods employed to allow the proteins which have been separated along the matrix, or chemical groups on such proteins, to be detected. This can involve such process as; staining the proteins on the gel (direct detection), exposing the gel which contains radiolabel sample to photographic film, or transfer of proteins to a matrix such as in immunoblotting (indirect detection). If detection is carried out there should be a description for the appropriate direct 5.1 or indirect detection method 5.2.</i>	
<i>5. Detection — 5.1 Direct detection</i>	
5.1.1 Name of direct detection process	The detection process applied to the gel; for example, visible staining or fluorescent staining.
5.1.2 Direct detection agents	The detection agents employed for the described process above. Such as the type of stain employed or the type of radiolabel. Give model and manufacturer, if appropriate, else describe origin. If any antibodies are used also describe them in terms of polyclonal, monoclonal, species, target and specificity. Identify antibodies as primary/secondary <i>etc.</i> The amount of detection agent employed during the detection protocol. In terms of volume and concentrations (if appropriate).
5.1.3 Additional reagents and buffers	Additional reagents used other than the detection agent described above; components with concentrations.

5.1.4 Equipment	Record the Model Name, Model Number and Manufacturer for specialized equipment (note that equipment such as glassware and shakers should not be included unless deemed integral to the result).
5.1.5 Direct detection protocol	Outline of the direct detection protocol, including, duration and temperature, if appropriate. If the protocol is a MIAPE compliant and published protocol then provide a reference the appropriate protocol(s).
<i>5. Detection — 5.2 Indirect detection</i>	
5.2.1 Name of indirect detection process	The indirect detection process applied to the gel. Such as immunoblot, exposure to photographic film.
5.2.2 Transfer medium	If the proteins separated along the gel are transferred to another medium to aid detection (such as a nitrocellulose or PVDF membrane, as used in immunoblots) then give details of the name and type of medium, models and manufacturers, where appropriate.
5.2.3 Detection medium	If the proteins on the gel matrix must be exposed to another medium to permit detection (<i>e.g.</i> , photographic film for radiolabel samples) then give details of name, model, manufacture, of detection medium.
5.2.4 Indirect detection agents	The indirection detection agents employed for the described process above. Such as the type of stain employed or the type of radiolabel. Give model and manufacturer, if appropriate, else describe origin. If any antibodies are used also describe them in terms of polyclonal, monoclonal, species, target and specificity. Identify antibodies as primary/secondary <i>etc.</i> The amount of detection agent employed during the detection protocol. In terms of volume and concentrations (if appropriate).
5.2.5 Additional reagents and buffers	Additional reagents used other than the detection agent described above; components with concentrations.
5.2.6 Equipment	Record the Model Name, Model Number and Manufacturer for specialized equipment (note that equipment such as glassware and shakers should not be included unless deemed integral to the result).
5.2.7 Indirect detection protocol	Outline of the indirect detection protocol, including, duration and temperature, if appropriate. If the protocol is a MIAPE compliant and published protocol then provide a reference the appropriate protocol(s).
<i>6. Image Acquisition — 6.1 Acquisition Equipment</i>	
6.1.1 Type of equipment	The type of equipment used in image acquisition, (<i>e.g.</i> , laser scanner, camera, fluorescent imager)
6.1.2 Name of equipment	Image acquisition equipment. Give model name and manufacturer.
6.1.3 Software	The software used in the acquisition process such as scanning software. Give manufacturer, name and version.

6.1.4 Calibration	Is the equipment calibration Automatic? Value of “Yes” or “No”. If “No” describe the calibration processes applied to the image acquisition equipment in section 6.1.5
6.1.5 Equipment specific parameters	Any equipment settings that are necessary to reproduce measurements, such as manual calibration or photomultiplier voltages on imagers, filters used. Include files if appropriate.
<i>6. Image Acquisition — 6.2 Acquisition Protocol</i>	
6.2.1 Image acquisition process	The protocol for image acquisition; <i>e.g.</i> , exposure times, laser types, wavelengths. If any pre-processing of scanner equipment other than calibration is performed such as noise filters, give details.
6.2.2 Reference to gel matrix	A reference to section 3 to indicate which gel matrix is being used for the image acquisition process
<i>7. Image (The raw image file resulting from section 6, no post-cropped images should be included)</i>	
7.1.1 Image name (or id)	The name or identifier for the image file; include image format (<i>e.g.</i> , TIFF).
7.1.2 Dimensions	The <i>x, y</i> dimensions of the image (in pixels for a digitized image).
7.1.3 Resolution	The resolution of the digitized image (<i>e.g.</i> , micrometers per pixel [$\mu\text{m}/\text{pixel}$])
7.1.4 Bit-depth	The bit-depth of the digitized image (<i>e.g.</i> , 8bit, 16bit).
7.1.5 Image Location	The image file location should be made available when the experiment is published, for example, using a Uniform Resource Identifier (URI) or a Digital Object Identifier (DOI).
7.1.6 Standard image orientation	The orientation of all gels must be high molecular weight at the top, low at the bottom. For gels with lanes, the lane numbers must increase from left to right. For other gels the lowest value of the physicochemical distribution must be on the left with the highest value to the right.