SUPPLEMENTARY MATERIAL

A

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ID   NONE PRELIMINARY; STN.
AC   GWI00000004;
DT   03-JUN-1998 (REL. 00, CREATED)
KW   NONE.
RN   [1]
RC   SPECIES=RAT; STRAIN=UNKNOWN; ORGAN=BRAIN;
RA   (st5164) TACCONI S., (emp15105) MERLO-PICH E.;
RL   SUBMITTED (JUN-1998) TO GWI DATA BANK.
DR   NONE; -; -.
IA   -!- GW: PROJECT_ID=NEUROBIOLOGY;
IA           EXP_NUM=NONE.
IA   -!- EXPERIMENT: DATE=03-JUN-1998;
IA                   NOTE=NONE.
IA   -!- SAMPLE_PREP: PROTOCOL=TP002;
IA                    DEVIATION=TISSUE
IA                              DEPC IS NOT NECESSARY;
IA                    DEVIATION=POLY-L-LYSINE
IA                              NONE;
IA                    DEVIATION=FIXATION
IA                              NONE.
IA   -!- STAIN_VISU: PROTOCOL=ST001;
IA                   PROBE_USED=NONE;
IA                   DEVIATION=SOLUTION
IA                             NONE;
IA                   DEVIATION=STAINING
IA                             NONE.
IA   -!- SUBJECT: SEX=UNKNOWN;
IA                AGE=UNKNOWN;
IA                WEIGHT=UNKNOWN;
IA                DISEASE=NONE;
IA                NOTE=NONE.
IA   -!- IMAGE_INFO: FILENAME=rat2nissl.GIF;
IA                   RESOLUTION=UNKNOWN;
IA                   MAGNIFICATION=1 X;
IA                   ORIGINALFILENAME=rat2nissl.GIF.
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B

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ID   GVA_TISSUE
AC   TP002
DE   TISSUE PREPARATION FOR IN SITU HYBRIDISATION
DE   Tissue Tek/poly-L-Lysine/paraformladehyde
PR   -!- TISSUE: 1. The tissue is dissected out from the animal fresh.
PR               2. Place it on aluminium foil resting on dry ice for some minutes.
PR               3. Mount the frozen tissue  onto a cutting block with a cryoglue(e.g.Tissue Tek).
PR               4. Transfer to the cryostat chamber at -20°C to equilibrate prior cutting.
PR               5. Cut 12-15 microm sections.
PR               6. Thaw mount the sections onto poly-L-Lysine coated slides.
PR               7. Allow sections to dry at RT for 30 min to several hours.
PR   -!- POLY-L-LYSINE: 1. Dissolve poly-L-Lysine hydrobromide:
PR                         1mg/ml in dH2O. Store in frozen aliquots.
PR                      2. Apply small drop (10 microl) to one end of a clean glass slide
PR                         and spread as a thin film with another slide.
PR                      3. Label the coated side as the dry film cannot be seen.
PR   -!- FIXATION: 1.Prepare a 4% solution of paraformaldehyde (PFA):
PR                   a. 40g paraformladehyde in 500ml DEPC treated water.
PR                   b. Add 1.0M NaOH dropwise until the suspension clears.
PR                   c. Add 500ml of 2x PBS.
PR                   d. Mix well and chill in a ice/water bath.
PR                   e. Check that the pH is roughly 7.0. Use the same day.
PR                 2. Transfer a rack of dry sections into the ice-cold 4% PFA for 5 min.
PR                 3. Wash 1min in PBS.
PR                 4. 70% Ethanol for several min.
PR                 5. Store in 95% Ethanol @4°C until required.
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C

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ID   GVA_STAINING
AC   ST001
DE   NISSL STAINING
DE   Cresyl violet
PR   -!- SOLUTION: 1. Mix the following:
PR                    a. 1g cresyl violet
PR                    b. 1l ddH2O
PR                 2. Heat at 50°C
PR                 3. Cool and filter
PR   -!- STAINING: Just prior to use:
PR                 add 1ml of 10% acetic acid  to 100ml final.
PR                 1. Dip slides 10 min.
PR                 2. 1 or 2 baths in EtOh 95%, 1-2 min.
PR                 3. 2 washes in absolute Ethanol, 1min.
PR                 4. 5min at least in xylen.
PR                 5. Mount with Entellan
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Figure S1. Annotation and protocols examples. (**A**) The annotation format is an extension of the SWISS-PROT format containing a new IA line type. The IA line type contains the Image Annotation information, formatted like the CC lines of the original SWISS-PROT format. In this example you can see a deviation from the original tissue preparation protocol (TP002) in the TISSUE step. (**B**) A tissue preparation and (**C**) staining protocol stored as a free extension of the SWISS-PROT format containing a new PR line type. The PR line type contains the Protocol information, organized in steps, formatted like the SWISS-PROT CC lines.

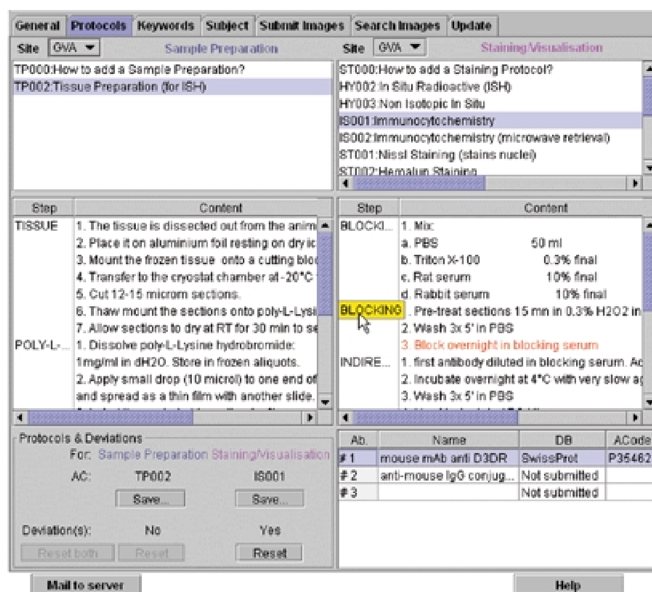

Figure S2. Protocols panel. The protocols are divided into tissue (TP) and cell (CP) preparation protocols (left half of the panel) and staining (ST), *in situ* hybridization (HY), immuno staining (IS) visualization protocols (right half of the panel). The protocols are viewed by origin (i.e. GVA for Geneva), and can locally be saved by clicking the Save buttons of the Protocols & Deviations panel in the lower left corner. The protocols content can be edited to introduce 'deviations' from the original protocols (red line in Blocking step of IS001). Deviations are searchable and are indicated in the Protocols & Deviations panel. The antibodies or probes table in the lower right corner is displayed with IS or HY protocols.

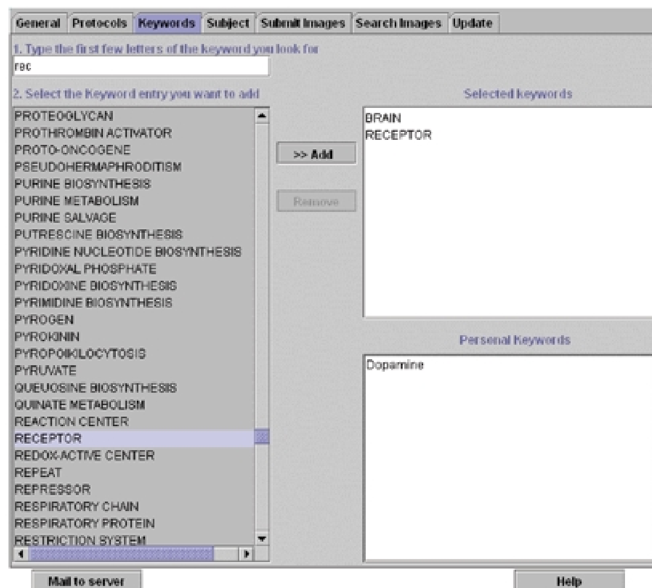

Figure S3. Keywords panel. Keywords can be selected from the SWISS-PROT list of keywords (left and top right) or can be entered in the Personal Keywords text area (bottom right).

Figure S4. Subject panel. The biological model used in the experiment can be selected with its corresponding strain. Disease, sex, age and weight characteristics can be added. The source type of biological material can be selected and more precisely specified in the Origin panel. The searchable Comments text area offers the possibility to indicate additional information about the specimen used in the experiment.

Figure S5. Submit Images panel. This is the panel where you actually select the images that you want to send to the GID. Several images from the same experiment, for instance a stack of confocal microscopy images can be sent at once. The left half of the panel allows you to navigate on the local disk(s) to select the files to transfer. On the right half, a list shows the selected images. The microscope magnification can be indicated for the whole set of images, or individually. To send the images to the GID, the biologist does not need to know tools like FTP: you simply click on the 'Send image(s)…' button and, after a summary window, the whole transfer is executed automatically with two progress bars showing the percentage of data transmitted.

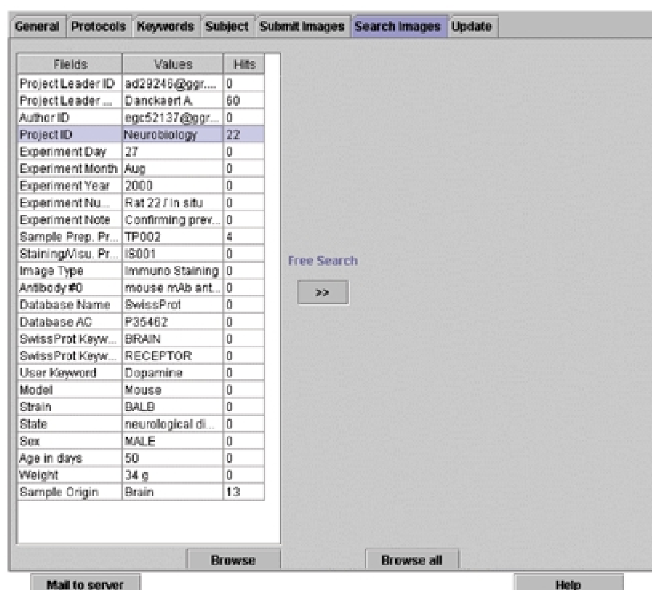

Figure S6. Search panel. Here you see the search results window, started with the contents of the annotations. For each field, you see the number of hits in the database. For instance, you can see that the protein target of the antibody is not present in the database, while the selected Tissue Preparation (TP002) and immuno staining protocols (IS001) do appear. To browse through the search results, you simply click on the field of interest or combine it with other fields by multiple selection to do the intersection ('Browse' button) or the sum of both selections ('Browse all' button). In addition to this Search by field feature, allowing you to distinguish between an author of an experiment called Mr Brain and a tissue sample from the brain, there is a global search that scans all the fields for the occurrence of a given word. After clicking on one of the browse buttons, the panel changes into the search results browse panel shown in Figure S7.

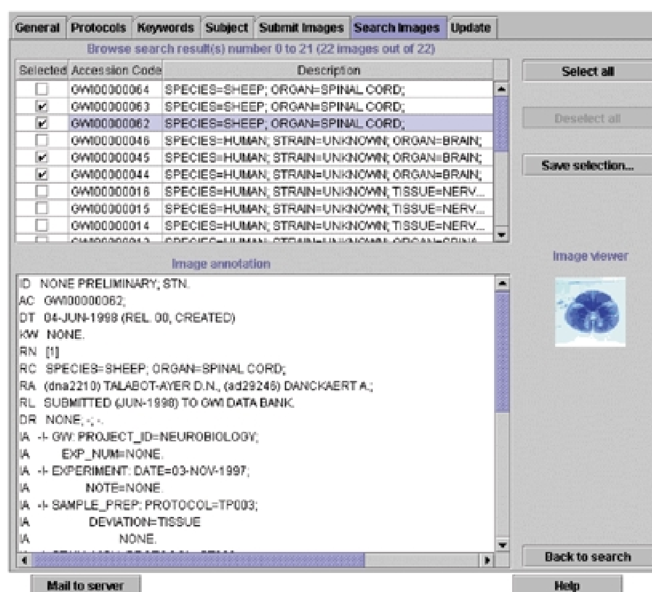

Figure S7. Search results browse panel. Showing the combined hits, under the form of a brief description composed of the Accession Code and the Description of the sample origin. The highlighted entry is fully described with its annotation (below) and illustrated by a small preview (on the right). While browsing the search results, you can select (check marks) those images you want to retrieve and press on the 'Save selection…' button to transfer them from the GID into your computer.

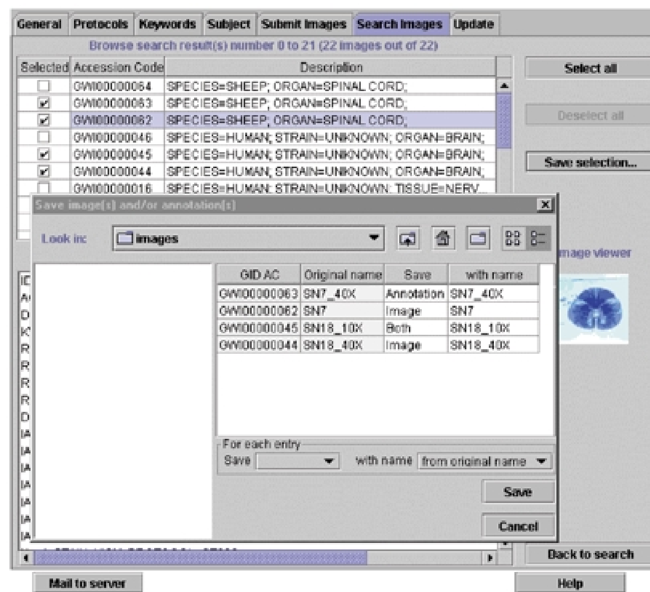

Figure S8. Search results retrieval panel. Before the actual transfer, you are given the choice of the destination folder for retrieving the full-sized original image on your local computer. In addition to retrieving only the image(s), it is possible to retrieve only the annotation(s) or both (Save column in the table or Save menu for each entry in the table). The data files can be retrieved using the original image file name, their GID accession code or a custom name. After clicking the 'Save' button, two bars appear to show the progress of the retrieval.