

Humane Device for Bleeding Mice

USDA – North Atlantic Area – Agricultural Research Service (ARS) – Plum Island Animal Disease Center – Foot-And-Mouth Disease Research Unit – Greenport, NY

Working in a research area that uses mice as experimental animals, Bill Golde and Luis Rodriguez became frustrated with the present cumbersome and inhuman methods of bleeding laboratory mice. The primary method used in the U.S. is retro-orbital (eye) bleeding. This is a rapid and efficient bleeding method but extremely inhumane for the mouse. In fact, the UK has banned this procedure. Alternatively, bleeding by clipping off the end of the tail is simple and slightly more humane, but yields a very limited amount of blood and neither method can be used when multiple samples are required from the same animal. Mice can be bled from the submandibular region (at the rear of the “cheek pouch”) using a scalpel to puncture one of the veins that drain the eye, the rear portion of the submandibular vein or the junction of the two. A great deal of practice and a fine touch is required as the scalpel must be inserted deep enough to puncture the vein but not so deep that it goes through the cheek. It is very difficult to learn this technique to consistently go deep enough to draw blood and not puncture the cheek. Bill and Luis recognized that if they could design a device that could only be inserted to a specific depth they may have a simple method for bleeding mice that could be easily taught and mastered. They were unsuccessful in their attempt to modify finger stick lancets diabetics use so they designed a prototype lancet they believed would work. Peter Gollobin, the owner of a small Long Island company that designs and manufactures medical products was invited to the laboratory to discuss design and manufacture of a prototype, and a CRADA was established. Peter designed and produced several lancets that were tested. Additional modifications and improvements established a design that was easy to use and worked every time. The final design is a 2” strip of surgical steel handle with a triangular blade that is narrower than the handle which provides a shoulder that prevents the blade from penetrating deeper than the length of the blade. The lancet comes with different point lengths for different size mice.

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