

Targeted Delivery of Cytotoxins for Sterilization of Cats and Dogs – *Rhodes*

It is my pleasure to chair the session on the targeted delivery of cytotoxins for sterilization in dogs and cats. This approach is like pharmaceutical ju-jitsu — it takes the deadly power of toxins, such as ricin, and uses it for a positive outcome, killing just the cells that are targeted, be they cancer cells or the specific sperm, egg or hormone-producing cells required for reproduction.

Three things need to come together for this approach to be effective:

1. A toxin has to be purified and attached to something that will take it to its target. This “transport molecule” could be an antibody that binds to a specific protein on a cell surface, or a hormone that binds to a specific hormone receptor.
2. The particular cell type to be destroyed has to have a specific “dock” for the deadly payload, to bind tightly to the cell and deliver the toxin to that cell alone. This “dock” could be a hormone receptor, or a specific cell surface protein that an antibody can grab onto.
3. The researcher has to make sure that the “dock” is ONLY on the cells to be killed and nowhere else, so that other “non-target” cells in other parts of the body are not harmed, causing unwanted side effects.

We will hear from our speakers this morning on how they have progressed in these three steps. Drs. Tash and Roby have identified targets in males and females, and have a targeting agent. Dr. Ja is studying a toxin fused to a hormone-like construct, and is using a hormone receptor as the “dock,” and Dr. Herr has developed some unique approaches to identifying specific cell targets in males and females that have promise in shutting down reproduction.

I look forward to hearing the details of their unique approaches. Because our time is limited, I refer you to the proceedings for their biographies. I want to thank them in advance for being here today, and I turn the podium over to Dr. Tash!