

**From:** <Karen.Linder@bru.bracco.com>  
**To:** <kad@nrc.gov>  
**Date:** Wed, Jun 12, 2002 11:45 AM  
**Subject:** 166m-Ho levels in 166-Ho. Response to question Control #131584

Dear Ms. Modes - Our supplier (Missouri Research Reactor) tells me that from NIST data, they have found the ratio of Ho-166m (the long lived isotope/Ho-166 (the short-lived isotope) at 1600 (shipping time) to be about  $5 \times 10^{-4}$  microcuries of Ho-166m per mCi of Ho-166. The sample analysed in this study was produced under the standard conditions that MURR uses to produce this isotope (a standard 155 hr irradiation at peak flux in their flux trap), so they believe that this will be a fairly consistent number.

We put Ho-166 on our license in anticipation of performing only comparative biodistribution studies in animals at some time in the future.. If we were to order 25 mCi of 166-Ho for this study, I calculate that we would receive  $25 \times 0.0005 \text{ uCi} = 0.0125 \text{ uCi}$  of Ho-166m.

This isotope is not listed on tables for exempt quantities, so the exempt limit default of 0.1 uCi of 166m-Ho for maximum possession without a license holds. The amount of 166m-Ho that we expect to receive will fall well below this level. Therefore, I do not think it is necessary to put it on our license. If at a later date, it looks like we are going to use more 166-Ho than we expect to right now, we will revisit this issue and add Ho-166m to our license.

Thanks for your helpful response to our decommissioning funding plan request. I appreciate the rapid turn-around.

Sincerely,

Karen Linder  
Bracco Research USA

**CC:** <sdannerlein@shorenetworks.com>