The European Agency for the Evaluation of Medicinal Products
*Human Medicines Evaluation Unit*

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**COMMITTEE FOR PROPRIETARY MEDICINAL PRODUCTS (CPMP)**

# POSITION PAPER ON PRODUCTION OF TALLOW DERIVATIVES FOR USE IN PHARMACEUTICALS

## 1. BACKGROUND

Tallow derivatives are frequently used as excipients in medicinal products, or are used in their manufacturing process. Examples of tallow derivatives include magnesium stearate (contained in tablets), glycerol (used as an excipient or as a reagent in manufacturing processes for biotechnology products), and polysorbates (used as a stabiliser in medicinal products or as a reagent in a viral inactivation step applied to many plasma derived medicinal products).

Tallow is not used as such in medicinal products, but it is the starting material used for the production of tallow derivatives. Production of tallow involves the melting of fat in tissues or carcasses, and its separation (by filtration and centrifugation) from proteineous material, followed by washing steps. The exact equipment used will vary from one renderer to the other and, therefore, the range of temperatures will vary. Rendering processes are described in EU legislation (Commission Decisions 92/562/EC). Experimental transmission studies performed by Dr. Taylor[1] demonstrated that tallow, produced from typical slaughterhouse offal (bones, organs, fat) from BSE infected cattle, using the mildest conditions[2] approved under the EU legislation (Commission Decision 92/562/EC), showed no detectable infectivity. Infectivity was detected, however, in the bone meal resulting as a by-product of this tallow production.

Manufacturing conditions for the preparation of tallow derivatives involve additional steps which include the use of high temperatures and/or high alkalinity.

## 2. RECOMMENDATIONS

Tallow used as the starting material for the manufacture of tallow derivatives should be produced by a method at least as robust as those referred to in Commission Decision 92/562/EC.

For the manufacture of pharmaceutical grade tallow derivatives, the following manufacturing conditions should be used :

- Transesterification or hydrolysis at not less than 200 °C for not less than 20 minutes under pressure (glycerol, fatty acids and fatty acid esters production)
- Saponification with NaOH 12 M (glycerol and soap production)
  - Batch process : at not less than 95 °C for not less than 3 hours ;
  - Continuous process: at not less than 140 °C, 2 bars for not less than 8 minutes, or equivalent.

It is also recommended that there is a pooling of European expertise from all EU scientific committees with a similar interest for minimising the risk of transmission of TSE, in order to develop harmonised European standards for tallow derivatives across all sectors.

[1] Taylor et al., The Veterinary Record, December 9 1995, 1327, 605-610.
[2] During these 'mild' conditions, the temperature reached 120 °C after 20 minutes or 117 °C after 17 minutes.

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