

## How to Recognize Falsified Veterinary Products and Actions to Take

Substandard, falsified, or unregistered/unlicensed veterinary products are a threat to the health and wellbeing of animals and humans. These products may contain unknown concentrations of the labeled drugs (possibly containing no active or too much active) and potential contaminants that may be unsafe (for example heavy metals and unlabeled drug substances). Serious adverse effects may be observed when these products are administered including the absence of disease control, worsening of disease, adverse reactions, or even death. When substandard or counterfeit antibiotics are used, the risks of antimicrobial resistance can be increased as can the risks of treatment failure and disease dissemination. When investigating treatment failure, the possible use of substandard and falsified medicines should be considered and explored.

To effectively identify substandard or falsified veterinary products, veterinarians should be aware of which products are likely to be targeted. This may include products that are in higher demand due to popularity or health emergencies, have high sales volumes or prices, are advertised at very low prices, have previously falsified or diverted, have previously been or are currently subject to a drug shortage, or are subject to a product alert or recall.

Veterinarians should also be aware of where the product is purchased and be alert for any suspicious activity. While veterinarians should be vigilant about all products, they should be hypervigilant about medicines purchased from a new trading partner, an unknown source pursuant to an unsolicited sales offer, or an unknown source over the internet (especially those offering lower prices, “deals” or ready access to products in shortage). Veterinarians should also be wary of trading partners who have previously sold or delivered falsified veterinary products, provided potentially false transaction histories, or been reluctant or delinquent in providing transaction histories or pedigrees.

Finally, there are certain warning signs that veterinarians should look for when they suspect falsified veterinary products. The veterinarian should examine the transport and shipping containers for abnormalities including an unusual (without explanation) or compromised/damaged package or transport container. Product packaging exhibiting suspicious inserts, unexpected materials or markings, unusual or excessive adhesive residue, foreign identification features, use instructions in a foreign language, missing information (such as lot/identification number or expiration date), and missing security or anti-counterfeiting technologies (such as holograms, color shifting inks, watermarks, neckbands, etc.) should also be examined closely. Veterinarians should inspect the label for missing information, altered product information, misspelled words, bubbling on the surface, languages not normally included on the packaging, a different product name than normal, information not matching the container, and unusual appearance (including font, color, images, etc.). The medication itself should be examined for unusual shape, color, imprint, odor, or quality (such as chips or cracks in tablet coatings or smeared or unclear ink imprints). In the European Union, veterinarians should be aware of parallel imports as possible falsified medical products especially where legal repackaging/relabeling occurs.

If the veterinarian thinks that they have identified a falsified product, the manufacturing company should be contacted and the suspicions reported. The appropriate regulatory authorities



should be contacted in the country of residence. In some countries this is a legal requirement. If the veterinarian thinks that a falsified product may have been administered to an animal, (s)he should take appropriate action to deal with the health of the animal(s). If the veterinarian thinks that a pet owner is administering a falsified product (s), he is dutybound to warn the owner of the health dangers and illegal nature of doing so.

#### **Background references:**

*Kelesidis, T. and M. E. Falagas (2015). "Substandard/counterfeit antimicrobial drugs." Clin Microbiol Rev **28**(2): 443-464.*

*Koczwara, A. and J. Dressman (2017). "Poor-Quality and Counterfeit Drugs: A Systematic Assessment of Prevalence and Risks Based on Data Published From 2007 to 2016." J Pharm Sci **106**(10): 2921-2929.*

*Rahman, M. S., N. Yoshida, H. Tsuboi, N. Tomizu, J. Endo, O. Miyu, Y. Akimoto and K. Kimura (2018). "The health consequences of falsified medicines- A study of the published literature." Trop Med Int Health **23**(12): 1294-1303.*