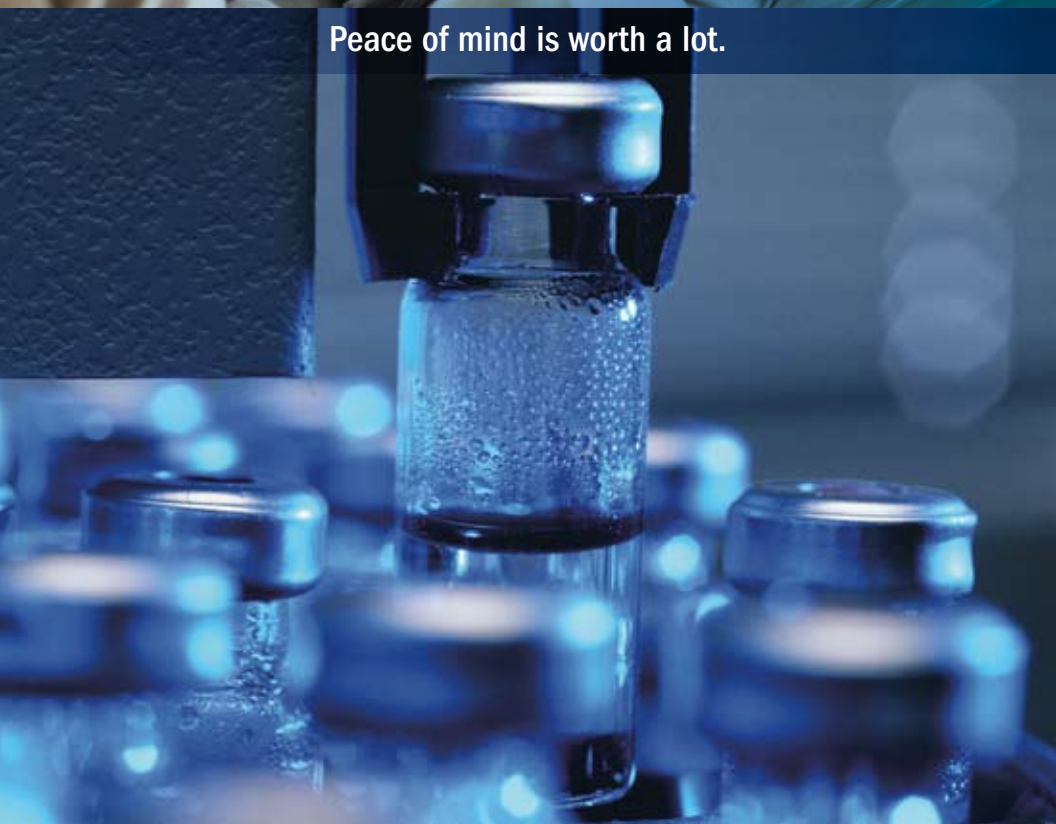




Why use a licensed animal health product?

Peace of mind is worth a lot.



Safety. Efficacy. Confidence. Integrity.

These are the hallmarks of a licensed animal health product.

The label on a licensed Canadian animal health pharmaceutical is the industry's seal of approval that a product has met Health Canada's third-party risk-benefit assessment. Through this approval, manufacturers are granted the right to label and market the product with information demonstrating the product's safety and efficacy. Only licensed animal drugs meet the strict risk-benefit assessment criteria of Health Canada.

Research and development is the only way that a new product comes to market, with the development of a new animal health product taking upwards of 8-10 years in some cases. Taking into account product failures, capital costs, time needed to complete the development cycle and the time to receive regulatory approval, total investment in a product can range from \$15 to 100 million U.S. dollars. This sum must be recovered from sales.


In Canada, however, there is an underground market which results in the use of an estimated \$100 million worth of non-Canadian licensed product. This market is an anomaly relative to other developed countries which do not permit such liberal access and use of non-domestically registered products.



Non-approved products have not undergone Health Canada's risk assessment. With such products the manufacturer has not received a Notice of Compliance (NOC), and the product does not have a Drug Identification Number (DIN).

Non-approved products may be finished products imported from another country, compounded formulations prescribed by a veterinarian and compounded by either a veterinarian or pharmacist. They can also be active pharmaceutical ingredients (APIs) applied directly to animal feed under a veterinary prescription. The sale and application of these products has many potential implications which should be considered. These include safety factors (animal and food), quality, potency, efficacy and trade.

The sale and use of non-approved products is taking place in Canada.



In June 2006, over-the-counter (OTC) sale of a counterfeited equine product, resulted in the death of an Ontario horse. In an earlier instance, a compounded florfenicol product destined for the agricultural sector actually contained cloramphenicol, a product banned from use in food-producing animals. The World Health Organization (WHO) has issued a warning indicating that up to 25 percent of medications used in developing nations are either fakes or substandard.

The most reliable assurance that a product has been approved is the DIN. This unique identifier demonstrates to the public that a manufacturer has met (and typically exceeded) the government's requirements for product safety, efficacy and integrity.

The Canadian Review System

Veterinary pharmaceuticals are governed by the same federal regulatory authority (Health Canada) that oversees human pharmaceuticals. Subject to the Food and Drugs Act and Regulations, the burden of proof of a product's safety, efficacy and quality lies with the manufacturer. This is demonstrated through the submission of volumes

of documentation to Health Canada's Veterinary Drugs Directorate (VDD). Experts within the VDD then conduct an independent scientific assessment of the manufacturer's technical data against the product label claims. Once the manufacturer has fully demonstrated the product's claims are substantiated, the Notice of Compliance and DIN are issued.

What Makes Up A Submission and What Does it Do?

A drug submission typically contains thousands of pages of documentation attesting to a manufacturer's claims that the product is efficacious, safe (for humans and animals) and manufactured under specific conditions. One of three departments within the VDD assesses each element of a submission dossier, for human and animal safety, manufacturing and quality control processes, and clinical evaluators examine trials conducted by a manufacturer demonstrating that the product is efficacious for those claims being sought. The table provides an overview of the multitude of studies that must be conducted affirming a product's safety, manufacture and efficacy.

How do we ensure product safety, efficacy & integrity?

Through countless studies and transparency of results with our regulators.

Animal Safety	Human Safety	
<p>Lab Animal Studies</p> <ol style="list-style-type: none"> Acute Toxicity Studies Subchronic Toxicity Studies Chronic Toxicity Studies Irritation Studies (dermal sensitization, dermal, ocular & tissue irritation) Reproduction & Teratogenicity Studies Other Studies <p>Target Animal Safety Studies</p> <ol style="list-style-type: none"> Margin-of-Safety Studies Safety Under the Proposed Conditions of Use Topical Drug Studies Inhalant Drug Studies Tissue Irritation Studies Udder Irritation Studies Reproductive Function Studies Clinical Safety Studies Pharmacovigilance Data 	<p>Lab Animal Toxicity Studies</p> <ol style="list-style-type: none"> Subchronic Oral Toxicity Studies Chronic Toxicity Studies Carcinogenicity Studies Combined Chronic Toxicity & Carcinogenicity Studies Multigeneration Reproductive Studies Teratogenicity Testing Short-term Tests for Genetic Toxicity Studies Pharmacological Studies Immunotoxicity Studies Neurotoxicity Studies Hormonal Studies in Primates Observations in Humans Other Studies 	<p>Microbiological Safety Studies</p> <p>Antimicrobials</p> <ol style="list-style-type: none"> Info on the antimicrobial Activity Spectrum of the antimicrobial Administration Antimicrobial Resistance Studies <ol style="list-style-type: none"> Resistance Mechanism Transfer of Antimicrobial Resistance Genes Cross Resistance Co-Resistance Resistance Development Effect on the Animal Gut Microflora Effect on Human Gut Microflora Impact on Human Medicine Pharmacokinetics <p>Residue Studies</p> <ol style="list-style-type: none"> Pharmacokinetics <ol style="list-style-type: none"> Pharmacokinetic Studies in the Intended Species Metabolism Studies in the Intended Species Comparative Metabolism Studies in Laboratory Animals Residue Studies <ol style="list-style-type: none"> Analytical Methodology Validation of the Regulatory Methods for the Detection & Confirmation of Residues of Veterinary Drugs in Food Drug Residue Depletion Studies Procedure for Establishing Maximum Residue Limits
<p>Efficacy</p> <ol style="list-style-type: none"> Microbiology Studies Laboratory Studies Animal Model Efficacy Studies Clinical Pharmacology Studies <ol style="list-style-type: none"> Pharmacokinetic Studies Bioavailability Studies Pharmacodynamic Studies Dose Determination Studies <ol style="list-style-type: none"> Optimum Dose Studies Challenge Studies Dose Confirmation Studies <ol style="list-style-type: none"> Pivotal Studies Clinical Studies Supplementary Supportive Efficacy Studies 	<p>Manufacturing & Quality Control</p> <p>Drug Substance</p> <ol style="list-style-type: none"> General Information on the Drug Substance Method of Manufacture Structure Elucidation & Confirmation Impurities Control of the Drug Substance Reference Standards Packaging Stability <p>Drug Product</p> <ol style="list-style-type: none"> Description of the Drug Product Pharmaceutical Development Method of Manufacture <ol style="list-style-type: none"> Formula Manufacturing Process Process Validation Control of Excipients Control of the Drug Product <ol style="list-style-type: none"> Specifications Analytical Procedures Validation of Analytical Procedures Batch Analyses Justification of Specifications Packaging Stability Additional Information 	
<p>Environmental Impact Studies</p>		

Post-Marketing Surveillance Means Peace of Mind

There is still plenty of activity on the part of the manufacturer following a product's market authorization.

Technical veterinarians employed by manufacturers are a resource to the veterinary community, which may have questions or concerns relating to a product's use. Technical veterinarians also monitor and follow-up with Health Canada on any reported serious adverse events. In addition to this, manufacturers prepare an annual evaluation of all adverse drug reactions for all drugs. There is no such tracking or reporting requirement for non-licensed drugs.

Generic vs. Innovative Product

Innovative drugs are those that hold a patent and are exclusively licensed for marketing by the patent holder.

A patent protects the investment in the drug's development by giving the company the sole right to sell the drug while the patent is in effect.

Generics are typically sold at discounts from the branded product because they do not incur the same upfront research and development costs.

Generic drug applications are termed 'abbreviated' as they are usually not required to include pre-clinical (lab animal and target animal toxicity) data. A generic applicant must demonstrate

to Health Canada the same level of safety, efficacy and quality as set out in the innovator's submission.

To gain approval, a generic drug product must:

- contain the same active ingredients as the innovator drug (inactive ingredients may vary)
- be identical in strength, dosage form, and route of administration
- have the same use indications in the same species
- meet the same batch requirements for identity, strength, purity, and quality
- be manufactured under the same strict standards required for innovator products.

Both generic and innovative products are licensed, and meet the requirements of Health Canada for safety, efficacy and manufacturing / quality control demonstrating value to animal owners and veterinarians.

Why Support Licensed Product?

- Demonstrated product safety, efficacy and integrity
- Re-investment in future research & product development
- Access to technical service expertise
- Post-marketing surveillance
- Traceability
- Continued industry investment in profession and animal sector



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