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Señor Director
DIRECCIÓN DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
E. S. D.

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JF

Referencia : Expediente No. **14.196.145**
Asunto : Solicitud de patente para: **"COMPOSICIONES VETERINARIAS ORALES PARASITICIDAS QUE COMPRENDEN AGENTES ACTIVOS DE ACCIÓN SISTÉMICA, MÉTODOS Y USOS DE LAS MISMAS"**
Solicitante : **MERIAL LIMITED**
Opositores : **PROCAPS S.A.**

1. ALEGATOS CONTESTACIÓN OPOSICIONES

1. Yo, Luz Clemencia de PAÉZ, en mi condición de apoderada de la sociedad solicitante **MERIAL LIMITED**, por el presente escrito doy respuesta a la oposición formulada por la compañía **PROCAPS S.A.** en contra de la solicitud de patente de invención que se tramita en el presente expediente.

2. CONTESTACIÓN DENTRO DEL TÉRMINO LEGAL

El Oficios número **15816**, mediante el cual se admitió a trámite la oposición presentada por **PROCAPS S.A.** y otorgó a mi representada término para presentar sus argumentaciones a favor de la patentabilidad del invento de que trata el asunto en referencia, me fueron notificados por fijación en lista el 06 de Enero de 2015. Por lo tanto este escrito de defensa está siendo presentado en tiempo oportuno.

3. RESPUESTA A LAS PETICIONES

Me opongo a las peticiones de la sociedad opositora y en consecuencia, solicito a ese Despacho que con fundamento en las consideraciones de hecho y de derecho que se **"EXCELENCIA LEGAL EN UN MUNDO SIN FRONTERAS"**

presentan en este escrito se declare sin fundamento la oposición presentada por la sociedad **PROCAPS S.A.** y en consecuencia, se declare que el invento titulado **"COMPOSICIONES VETERINARIAS ORALES PARASITICIDAS QUE COMPRENDEN AGENTES ACTIVOS DE ACCIÓN SISTÉMICA, MÉTODOS Y USOS DE LAS MISMAS"** a nombre de mi representada, la sociedad **MERIAL LIMITED**, tramitado bajo el expediente de la referencia es patentable.

4. FUNDAMENTO FÁCTICO DE LA OPOSICIÓN

A continuación procederé a enumerar los argumentos tenidos en cuenta por las sociedades opositoras para presentar oposición en contra de la presente solicitud:

4.1 Argumentos de la sociedad opositora **PROCAPS S.A.:**

4.1.1 Antes de la fecha de prioridad de esta solicitud se encuentran los siguientes documentos que afectan la patentabilidad de la presente solicitud:

- D1: **WO2011149749**, publicada el 1 de Diciembre de 2011.

4.1.2 El documento D1 da a conocer una forma sólida de 4-[5-[3-cloro-5-(trifluorometil)fenil]-4,5-dihidro-5-(trifluorometil)-3-isoxazolil]-N-[2-oxo-2-[(2,2,2-trifluoroetilo)amino]etil]-1-naftalenocarboxamida. También en D1 se describen composiciones que contienen una forma sólida de Compuesto 1 y métodos para controlar una plaga de invertebrados que comprenda contactar la plaga de invertebrados o su entorno con una cantidad biológicamente eficaz en forma sólida de Compuesto 1 o una composición que contiene una forma sólida de Compuesto 1. Esta anterioridad de D1, particularmente en las reivindicaciones 2 a 4; página 21, línea 15-página 27, línea 9; tabla A; y, página 49, línea 33-página 50, línea 23, se refiere a una composición para proteger a un animal de una plaga parásita invertebrada adecuada para administración oral en forma de gránulos que comprenden un polimorfo cristalino del compuesto 1 que se puede combinar con agentes activos adicionales, por ejemplo, lactonas macrocíclicas tal como avermectinas como se indica en la tabla A. Como se evidencia, esta anterioridad D1 define la misma materia que comprende la presente solicitud. De igual forma que la presente invención, esta anterioridad D1 ya resolvió el problema de parásitos, pues define

que es usado para el tratamiento contra plagas tales como por ejemplo, plagas de invertebrados parásitos controlados mediante la administración de una cantidad efectiva como parasitocida de un compuesto I a un animal para ser protegidos incluyen ectoparásitos artrópodos, ácaros y endoparásitos tales como helmintos, por ejemplo, nematodos, trematodos, cestodos, acantocéfalos, etc. Por lo tanto, este documento objeto de oposición a la luz del documento D1 carece de NOVEDAD.

5. RESPUESTA A LOS HECHOS Y ALEGATOS

5.1. Me permito presentar a consideración de ese Despacho, las razones que demuestran que es procedente otorgar privilegio de patente a la invención solicitada por mi representada en este asunto, toda vez que no infringe las normas citadas por la apoderada de la opositora como sustento de sus pretensiones, como ninguna otra establecida en nuestro ordenamiento vigente.

5.2. Con respecto a las observaciones sobre **novedad** realizadas por la sociedad opositora, manifiesto a ese Despacho que éstas no son adecuadas frente a la metodología que debe adelantarse para determinar la patentabilidad de una solicitud de patente. Al respecto es preciso tener en cuenta las siguientes consideraciones:

En cuanto al requisito de novedad, es pertinente destacar lo señalado en el Manual Andino de Patentes página 65:

"para determinar la novedad de la invención, se debe comprobar si existen anticipaciones del estado de la técnica que contengan explícitamente todas las características técnicas esenciales de la invención. El examen de novedad se efectúa comparando elemento por elemento de la invención tal como está definido por las reivindicaciones con los del estado de la técnica." (Resaltado fuera del texto).

De esta manera, es claro que para la evaluación de novedad, se deben señalar los documentos más cercanos del estado del arte en los cuales se revela explícitamente todas las características técnicas de la invención.

5.3. Aún cuando en el escrito de oposición presentado por la sociedad **PROCAPS S.A.**, aparentemente se cita el documento del estado del arte que considera más cercano, esto es **D1: WO2011149749**, no se adecua al procedimiento que debe seguirse para determinar si una invención cumple con este requisito, pues no revela las características técnicas de la presente invención. Así, no se presenta un análisis de fondo alguno sobre el mismo y frente a la invención, para llegar a conclusiones no sustentadas desde el punto de vista de patentes con respecto a la real ausencia de este requisito de patentabilidad.

Lo anterior, por cuanto el opositor no debe basarse en apreciaciones personales sino que toda objeción respecto a la falta de novedad debe probarse a partir del estado de la técnica. En particular, el opositor tiene la carga de demostrar a partir de lo revelado en el estado del arte que la invención en su integridad ya se encontraba allí revelada.

5.4. De esta forma, frente a oposición presentada por la sociedad **PROCAPS S.A.** y sus argumentos sobre la ausencia de novedad de la invención de mi representada, con fundamento en la anterioridad citada **D1, WO2011149749**, mi representada desea poner de presente lo siguiente:

El documento D1 divulga ciertas formas cristalinas sólidas del compuesto 4-[5-[3-cloro-5-(trifluorometil)fenil]-4,5-dihidro-5-(trifluorometil)-3-isoxazolilo]-N-[2-oxo-2-[(2,2,2-trifluoroetil)amino]etil]-1-5-naftalenocarboxamida. El documento D1 también describe ciertas composiciones para proteger un animal contra plagas parasitarias de invertebrados que comprende un polimorfo cristalino de 4-[5-[3-cloro-5-(trifluorometil)fenil]-4,5-dihidro-5-(trifluorometil)-3-isoxazolilo]-N-[2-oxo-2-[(2,2,2-trifluoroetil)amino]etil]-1-5-naftalenocarboxamida. Algunas de las composiciones descritas se pueden administrar por vía oral y pueden estar en la forma de soluciones, emulsiones, suspensiones, pastas, geles, cápsulas, tabletas, bolos, polvos, gránulos, retención en el rumen y bloques para alimentación/agua/para lamer (página 50, líneas 4-6).

Sin embargo, no hay ninguna divulgación directa y sin ambigüedades en D1 de una composición veterinaria blanda masticable que comprende un compuesto de fórmula I. De hecho, D1 no describe ningún tipo de formas de dosificación masticables. Las formas de dosificación blandas masticables son bien conocidas en la técnica y tienen un condición separada de la formulación del estado de la técnica, en particular en la medicina

veterinaria. Así las cosas, la formas de dosificación masticables se refieren a una forma de dosificación en el que el acto de masticar aumenta el área superficial del agente activo y puede aumentar la tasa de absorción en el tracto digestivo (documento WO 2013/119442 en la página 3, líneas 4-6). Por ejemplo, como se describe en la página 3, línea 27 a página 4, línea 2, de la descripción, US 7,955,632 B2 y US 2004/0037869 A1 y WO 2004/016252 describen todas las formas de dosificación blandas masticables veterinarias.

Además, adjunto a este documento se encuentran las páginas 1118-1121 del Manual de Merck/Merial para la Salud de las Mascotas (2007) que demuestra, además, que las formas de dosificación masticables, tales como tabletas masticables, eran formas de dosificación conocidas en la medicina veterinaria en la fecha de prioridad y se distinguen de otras formas de dosificación para administración oral, tales como soluciones, emulsiones, pastas y cápsulas.

De esta forma, manifestamos que ninguno de los ejemplos de formulación descritos específicamente que se encuentran en las páginas 17 a 19 de D1 corresponde a una composición de dosificación blanda masticable. Estas formulaciones se dirigen a usos agrícolas y son muy diferentes de la composición blanda masticable recitada en las reivindicaciones de la presente solicitud.

Adicionalmente, la página página 50, líneas 4-16, de D1, la cual describe formulaciones para administración oral a animales, incluye ciertos excipientes que pueden incluirse en las formulaciones, pero no incluye la combinación de excipientes de las reivindicaciones dependientes 4 a 15. Por ejemplo, este fragmento describe que las formulaciones para administración oral pueden formularse con aglutinantes/rellenos conocidos en la técnica, polímeros sintéticos, y si se pueden añadir lubricantes deseados, agentes desintegrantes, colorantes y pigmentos. No obstante, esta descripción de formulaciones orales para animales no incluye la presencia de un disolvente, un humectante o un agente tensioactivo, como se requiere en las reivindicaciones 4 a 15.

Por lo tanto, aunque D1 describe generalmente formulaciones que se pueden usar para tratar a los animales contra parásitos, no describe ningún tipo de composición masticable, y mucho menos la composición veterinaria blanda masticable recitada en las

reivindicaciones de la presente solicitud. Por lo tanto, consideramos que la composición veterinaria blanda masticable recitada en la reivindicación 1 es novedosa sobre D1.

Así entonces, es claro que la presente solicitud de patente es novedosa frente al documento citado por la parte opositora **PROCAPS S.A.**, por cuanto dicho documento no divulga características de la invención reivindicada por mi representada.

5.4. De modo que, es claro que los argumentos y documento citado por la sociedad opositora **PROCAPS S.A.** no son relevantes para el estudio de novedad de la presente solicitud. Así, de las enseñanzas del documento citado por la sociedad opositora se concluye, que éstos no llevan a un técnico versado en la materia a obtener la presente invención por cuanto no divulgan específicamente la invención aquí reivindicada, por lo que no resulta una anterioridad válida que puedan afectar su novedad.

5.5. Por tanto, contrario a lo señalado por la apoderada de la sociedad opositora, el invento para el cual se solicita la protección a través de la concesión de la patente en el expediente de la referencia, cumple cabalmente con los requisitos de los artículos 14, 16 y 18 de la Decisión 486 de la Comisión de la Comunidad Andina.

6. PETICIONES

Con fundamento en lo anterior solicito a ese Despacho lo siguiente:

6.1 Declarar infundada la oposición presentada por **PROCAPS S.A.**

6.2 Declarar que el invento titulado “**COMPOSICIONES VETERINARIAS ORALES PARASITICIDAS QUE COMPRENDEN AGENTES ACTIVOS DE ACCIÓN SISTÉMICA, MÉTODOS Y USOS DE LAS MISMAS**” para el cual mi representada solicita el otorgamiento de la patente de invención cumple con los requisitos del artículo 14, 16 y 18 concordantes de la Decisión 486 de la Comisión de la Comunidad Andina.

6.3 Otorgar el privilegio de patente de invención para “**COMPOSICIONES VETERINARIAS ORALES PARASITICIDAS QUE COMPRENDEN AGENTES ACTIVOS**”

DE ACCIÓN SISTÉMICA, MÉTODOS Y USOS DE LAS MISMAS" a favor de MERIAL LIMITED.

7. ANEXOS

- 7.1 Copia de las páginas 1118 a 1121 del Manual de Merck/Merial para la Salud de las Mascotas (2007)

8. NOTIFICACIONES

Mi representada y yo recibiremos notificaciones en la Secretaría de su Despacho o en mi oficina de abogada ubicada en la Carrera 4ª No. 72-35 de la ciudad de Bogotá, D.C.

Señor Director,

Luiz Clemencia de Paéz
LUZ CLEMENCIA DE PAÉZ

C.C. 35.456.344 de Usaquén

T.P.A. No. 23.555

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HOME EDITION

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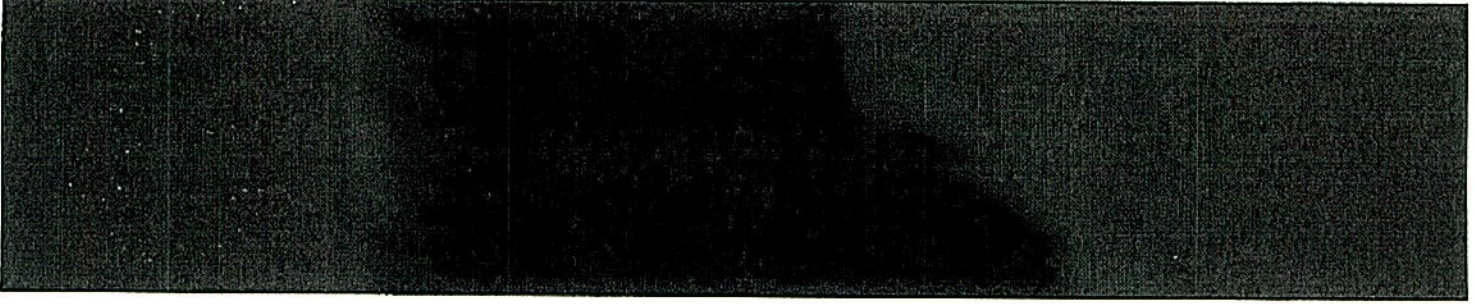
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CHAPTER 80

Drugs and Vaccines

INTRODUCTION

If your pet has been diagnosed with a condition or disease that can be managed or cured, your veterinarian will most likely begin discussing treatment. He or she will recommend drugs that are necessary, safe, and effective for both the individual animal and the specific disorder. For many conditions, there are a variety of drugs that might be considered as an appropriate treatment. When selecting one to prescribe, veterinarians also consider the dose (amount), the method of action, how often to give the chosen drugs, the best way to give the drug, the particular form (for example, pills, liquid, or ointment) to be used, any public health or environmental effects, and local and state regulations.

This chapter provides some basic information on the types of formulations and application methods commonly used to treat diseases or disorders in animals, as well as a general discussion of the types of drugs used to treat disorders within certain body systems (such as the circulatory or digestive system). Specific drug therapies for individual conditions are not discussed here, however. For more detailed information on the treatment for a specific disease or disorder, you should refer to the chapter in this book where the condition is described.

Many chemicals and drugs can be used to combat disease-causing agents. Treatment with any drug involves a relationship between the host animal (your pet), the agent that causes disease, and the drug. The drug may be toxic only to the invading organism, but in many cases, it may also cause adverse effects in the host animal. Included in this category are drugs that are active against bacteria, viruses, fungi, parasites, and even tumors.

Your pet's natural defense mechanisms should be maximized when treating an

infectious or parasitic disease in order to prevent an extended recovery time or a relapse. Minimizing stress, providing quality nutrition, and boosting the immune system are all approaches that may be used. An effective drug treatment program involves the veterinarian and the pet owner making informed decisions and carefully following all instructions.

As a pet owner, you should thoroughly discuss with your veterinarian any and all drugs—whether prescription, over-the-counter, or other medications (for example, herbal or other alternative preparations)—that you are thinking about giving to your pet. Inform yourself about how the drug works and any possible negative effects it may have. Even for drugs that seem easy to use or that you have given your pet before, it is important to carefully read the label and administer the correct dose as directed.

Extralabel Use of Drugs

Many of the drugs used in animals in the United States have not been formally approved by the Food and Drug Administration (FDA) for use in a particular species. However, veterinarians have the legal authority to prescribe drugs that have been approved for use in animals or humans for purposes beyond those for which they have been approved. This is referred to as extralabel (or off-label) use. The studies needed to gain FDA approval for a drug to treat a particular disease in a particular species usually require 7 or more years and millions of dollars. Because of these factors, the projected sales may not be large enough for a drug company to justify seeking approval in multiple species. Once a drug is approved for one use, however, it may also be prescribed by licensed professionals for other circumstances.

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When deciding which drug to use to treat an animal, veterinarians rely on their training and experience, published reports in professional veterinary journals, and continuing education received at professional meetings. In order to prescribe a drug for your pet, your veterinarian must have what is called a valid veterinarian-client-patient relationship. This means that the veterinarian has agreed with you to serve your pet's medical needs, has recently examined your pet, and is available for followup care.

HOW DRUGS ARE GIVEN IN ANIMALS

A wide range of dosage formulations and delivery systems has been developed to provide for the care and welfare of animals. Using the correct dosage is very important in terms of effectiveness and safety. Drug treatment and delivery strategies can be complicated because of the variety of species and breeds treated, the wide range in body sizes, different animal rearing practices, seasonal variations, and the level of convenience, among other factors. Innovative solutions have been developed to meet many of these challenges—for example, the convenient dosing option offered by topical spot-on formulations for treating external and internal parasites on dogs and cats.

Drugs Given by Mouth

Oral dosage forms (given by mouth) include liquids (solutions, suspensions, and emulsions), semi-solids (pastes), and solids (tablets, capsules, powders, granules, premixes, and medicated blocks).

A **solution** is a mixture of 2 or more components that mix well and form a single phase that is consistent down to the molecular level (such as sugar water). Solutions are absorbed quickly and generally cause little irritation of the lining of the stomach and intestine. However, the taste of some drugs is more unpleasant when in solution. Oral solutions provide a convenient means of drug administration to newborn and young animals.

A **suspension** is a coarse dispersion of insoluble drug particles in a liquid (for example, flour mixed in water). Suspensions are useful for administering insoluble or poorly soluble drugs or in situations when the presence of a finely divided form of the material in the stomach and intestinal tract is required. The taste of most drugs is less noticeable in suspension than in solution because the drug is less soluble in suspension. Suspensions must typically be shaken vigorously just prior to administering.

An **emulsion** consists of 2 non-mixable liquids, one of which is dispersed throughout the other in the form of fine droplets (such as oil and vinegar salad dressing). Emulsions for oral administration are usually oil (the active ingredient) in water. They facilitate the administration of oily substances such as castor oil or liquid paraffin in a more palatable form.

A **paste** is a 2-component semi-solid in which a drug is dispersed as a powder in a liquid or fatty base. It is critical that pastes have a pleasant taste or are tasteless. Pastes are a popular dosage form for treating cats and horses, and can be easily and safely administered by owners.

A **tablet** consists of one or more active ingredients mixed with fillers. It may be a conventional tablet that is swallowed whole or a chewable tablet. Conventional and chewable tablets are the most common forms used to administer drugs to dogs and cats. Tablets can be more physically and chemically stable than liquid forms. The main disadvantages of tablets are the low absorption rate of poorly water-soluble drugs or simply poorly absorbed drugs, and the local irritation of the stomach or digestive tract lining that some drugs may cause.

A **capsule** is usually made from gelatin and filled with an active ingredient and fillers. Two common capsule types are available: hard gelatin capsules for solid-fill formulas, and soft gelatin capsules for liquid-fill or semi-solid-fill formulas. Capsules have no taste and are therefore good

for drugs that are otherwise hard to give because of their bad flavor.

A **powder** is a formulation in which a drug powder is mixed with other powdered fillers to produce a final product. Most powders are added to food. Powders have better chemical stability than liquids and dissolve faster than tablets or capsules. Unpleasant tastes can be a factor with powders and are a particular concern when used in food because the animal may not eat all of it. In addition, sick animals often eat less and may not eat enough of the powdered drug for it to be effective.

A **granule** consists of powder particles that have been formed into larger pieces. Granulation is used when combining more than one form of medication. Granulation is especially effective for combining particles that are of different sizes because it helps prevent the separation or settling of the different particle sizes during storage or dose administration. Imagine granola clusters—if you just have granola mix, the smaller pieces fall to the bottom and are not eaten as often, but if you form it into clusters (large granules), you get every type of ingredient in each bite.

Drugs Given as Injections or Implants

A drug that is given parenterally—that is, by injection or as an implant—does not go through the gastrointestinal system. These drugs may be formulated in several different ways for use in animals, including solutions, suspensions, emulsions (see page 1119), and as a dry powder that is mixed with a liquid to become a solution or a suspension immediately prior to injection. Dry powders are used for those drugs that are unstable in liquid form.

The majority of **implants** used in veterinary medicine are compressed tablets or dispersed matrix systems in which the drug is uniformly dispersed within a non-degradable polymer. Implants are generally not used in dogs or cats but may be used in horses (for example, an ear implant for reproductive drugs used in mares).

Drugs Applied to the Skin or Mucous Membranes

The dosage forms applied to the skin or mucous membranes that are available for treating animals include solids (dusting powders), semi-solids (creams, ointments, and pastes), and liquids (solutions, suspension concentrates, and emulsifiable concentrates). These are known as topical drugs. Of special interest are transdermal delivery systems that work by carrying medications across the skin barrier to the bloodstream. Examples of these are transdermal gels and patches that are used in pets. There are also dosage forms that are unique to veterinary medicine, such as spot-on or pour-on formulations developed for the control of parasites.

A **dusting powder** is a fine-textured insoluble powder containing ingredients such as talc, zinc oxide, or starch in addition to the drug. Some feel gritty, and some have a smooth texture. Some dusting powders absorb moisture, which discourages bacterial growth. Others are used for their lubricant properties. The use of dusting powders is good for skin folds and not good for use on wet surfaces, as caking and clumping is likely to result.

A **cream** is a semi-solid emulsion formulated for application to the skin or mucous membranes. Cream emulsions are most commonly oil-in-water but may be water-in-oil. The oil-in-water creams easily rub into the skin (commonly called vanishing creams), and are easily removed by licking and washing. Water-in-oil emulsions are skin-softening and cleansing. Water-in-oil creams are also less greasy and spread more readily than ointments.

An **ointment** is a greasy, semi-solid preparation that contains dissolved or dispersed drugs. A range of ointment bases is used. Ointments are often effective at soothing because they block the skin from irritation. Ointments are useful for chronic, dry skin conditions and are not good for oozing or weeping areas of the skin.

A **paste** for skin use is a stiff preparation containing a high proportion of finely

to the Skin Membranes

is applied to the skin or membranes that are available for include solids (dusting powders, ointments, liquids (solutions, suspensions, and emulsifiables) and are known as topical preparations. Of particular interest are transdermal preparations that work by carrying a drug through the skin barrier to the bloodstream. Examples of these are transdermal patches that are used in a variety of dosage forms that are used in veterinary medicine, such as transdermal formulations developed for the control of parasites.

One type of transdermal preparation is a fine-textured emulsion containing ingredients such as zinc oxide, or starch in addition to the drug. Some emulsions have a gritty, and some have a smooth texture. Some dusting powders have a moisture, which discourages growth. Others are formulated to have astringent properties. The use of a transdermal patch is good for skin that is wet or moist, for use on wet surfaces, and for use on dry skin. It is likely to result in a solid emulsion formulation to the skin or mucous membranes. Emulsions are most commonly water-in-oil but may be water-in-water creams easily rubbed off. Only called vanishing emulsions are easily removed by licking. Water-in-oil emulsions are used for cleansing. Water-in-oil emulsions are greasy and spread more easily.

A greasy, semi-solid preparation dissolved or dispersed in an ointment base is used. It is effective at soothing the skin from irritation. It is useful for chronic, dry skin. It is not good for oozing or weeping skin.

One use is a stiff preparation of a proportion of finely

powdered solids such as starch, zinc oxide, calcium carbonate, and talc in addition to the drug(s). Pastes are less greasy than ointments. Pastes do not seal wounds.

Solutions are liquid formulations (see page 1119). Topical solutions include eye drops, ear drops, and lotions.

A **transdermal delivery gel** consists of a gel that delivers the active drug through the skin to the bloodstream. Not all drugs are suitable for this type of transdermal application, however. Transdermal gels are used to treat several diseases in dogs and cats, including undesirable behavior, cardiac disease, and hyperthyroidism. The dose is applied to the inner surface of the ear, making it easy to administer, especially in cats.

A **transdermal delivery patch** typically consists of a drug incorporated into a patch that is applied to the skin. The drug is absorbed across the skin over a long period of time. One type of pain reliever, which produces reactions like the body's own natural pain relievers, is delivered by transdermal patch in dogs, cats, and horses.

A **spot-on formulation** is a solution of active ingredient(s), which also typically contains a co-solvent and a spreading agent to ensure that the product is distributed to the entire body.

Insecticidal collars are plasticized polymer resins that contain an active ingredient. Collars for the control of ticks and fleas on dogs and cats release the active ingredient as a vapor, a dust, or a liquid, depending on the chemical. The animal's activity is an important factor in how well the insecticide moves from the collar to the animal.

EFFECT OF DRUG TREATMENT ON THE FETUS OR NEWBORN PET

An important aspect of medical treatment is the effect the treatment will have on the fetus or newborn when given to a pregnant or lactating animal. Many drugs are capable of crossing the

placenta and affecting the fetus. Certain antibiotic drugs are toxic to a fetus, while others may affect developing cartilage, bones, and teeth. Some antifungal drugs and all cancer chemotherapeutic drugs are potentially harmful to a developing fetus. Glucocorticoids may cause cleft palate or other defects in puppies.

When medications are given to lactating animals, the excretion of the drug or its byproducts in milk and the possible effects on the suckling newborn must be taken into consideration.

GUIDELINES FOR THE USE OF ANTIBIOTIC DRUGS

Antibiotic drugs are commonly used in veterinary medicine to treat infectious diseases that are caused by bacteria and certain other microorganisms. There are many different classes of antibiotics available for use in animals, including penicillins, cephalosporins, cephamycins, aminoglycosides, quinolones, sulfonamides, tetracyclines, and macrolides. Some are effective against a wide range of organisms, while others are more closely targeted (for example, they may be effective against some bacteria but less effective against other bacteria). Thus, antibiotics are often referred to as broad-spectrum or narrow-spectrum drugs, respectively (see TABLE 3).

Successful antibiotic treatment is based on 4 principles: 1) identifying the disease-causing agent and selecting the appropriate drug for treatment; 2) attaining effective concentrations of the drug at the site of infection for a sufficient period of time; 3) choosing a dose rate, frequency, and method of administering the dose that maximizes the likelihood of a cure, prevents relapse, and minimizes the risk of developing resistance while causing no harm to the animal; and 4) using specific and appropriate supportive treatment to