The observed symptoms are in nervous dominant : ataxy (*lack of coordination of the movements)*, paresy (partial loss of the driving capacities of a part of the body) or paralysy, dejection even coma, mydriase (increase of the diameter of the ward), blindness / amaurose, shivers, hyperesthesy even convulse. We notice in collies (and other sensitive breeds), the usually described board is a paresy *(temporary paralysy)* then a progressive ascending paralysis, then a bewilderment or a coma of slow evolution.

There is no effective antidote in the ivermectine. Various protocols have been proposed but didn't allow to improve the clinical evolution. The **treatment** is based on repetitive administration of activated wood charcoal, assisted nutrition, adapted rehydration, sometimes a mechanical ventilation(in case of coma).

Screening :

The transfer of the gene MDR1 responsible for the medicinal sentimentality is an absence of 4 basic pairs at the level of this gene. A STOP codon is the mark of the end during the translation of the gene MDR1 in P-glycoprotein. The deletion of these 4 basic pairs entails the appearance of several codons STOP and leads to the production of incomplete P-glycoprotein and thus inactive. The test amplifies the fragment of the exon 4 carriers of the transfer, the size of the amplified fragment is then measured to determine if there is or not deletion. We realize in parallel several controls with 3 chaps of fragments (+ / +, +/- and -/- witnesses).
Only an oral or blood taking allows us to detect this disease.

Results expression and meaning :

In genetic the code to indicate the normal gene is "+" and on the contrary the code to indicate the affected gene is "-". So, after a screening test MDR1, the status of a dog can be or :

+ / + Homozygote Normal - not carrier of the gene MDR1, will never pass on the transfer
- / + Heterozygote - Carrier of the gene MDR1, passes on the transfer, statistically, in 50 % of the cases
- / - Moved homozygote - Affected by MDR1, passes on the transfer in 100 % of the cases

To avoid the distribution of this pathology, we recommend to test the breeders.
To optimize the organization of your reproduction, please consult the chessboard of crossing below:

			Father					
			Not carrier		Carrier		Affected	
			+	+	+	-	-	-
Mother	Not carrier	+	+/+ Not carrier	+/+ Not carrier	+/+ Not carrier	+/- Carrier	+/- Carrier	+/- Carrier
		+	+/+ Not carrier	+/+ Not carrier	+/+ Not carrier	+/- Carrier	+/- Carrier	+/- Carrier
	Carrier	+	+/+ Not carrier	+/+ Not carrier	+/+ Not carrier	+/- Carrier	+/- Carrier	+/- Carrier
		-	+/- Carrier	+/- Carrier	+/- Carrier	-/- Affected	-/- Affected	-/- Affected
	Affected	-	+/- Carrier	+/- Carrier	+/- Carrier	-/- Affected	-/- Affected	-/- Affected
		-	+/- Carrier	+/- Carrier	+/- Carrier	-/- Affected	-/- Affected	-/- Affected

For more information, please contact us !
This test is protected by a certificate. To respect this certificate, GENINDEXE signed a partnership with the holder of the European license to be able to propose this test.

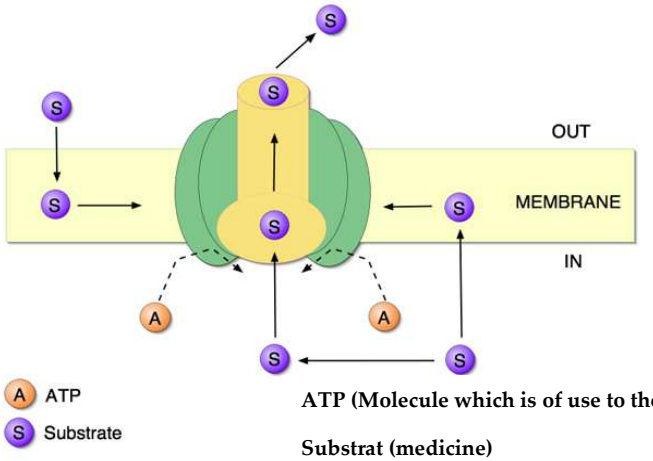
MULTI DRUG RESISTANCE - MDR1 TEST

Description :

The clinical answer to a medicine is characterized by interpersonal variations (*Multiple chemical reactions*). This variability of pharmacokinetic order (*Variation of concentration of the medicine*) and or pharmacodynamic can be essential but can be also added to physiological factors (co-morbidity, age, sex), environment (associated medicines, food), and to genetic factors. The pharmacokinetic variability of genetic origin is the consequence of the variation of expression of coding genes for proteins involved in the future of a medicine. Recently, studies suggested that genetic variations involving medicinal carriers, and more particularly P-glykoprotein (P-gp), could be associated with significant kinetic modifications.

P-glycoprotein or P-gp :

P-glykoprotein is a trans-membranair protein *(cross the membrane, the barrier of protection of the cell)* implied in the physical future of the medicine. The MDR1 gene or ABCB1 coding for present P-glykoprotein a genetic polymorphism. P-gp constitutes the medicinal carrier (help to the passage of the medicine in the body) the most studied at present. P-gp seems to act as a pump which fixes and expels the medicine towards the outside of the cell.



OUTSIDE

Cells Membrane

INSIDE

ATP (Molecule which is of use to the transition)

Substrat (medicine)

P-glycoprotein action

P-gp concerns the membranair transport of about fifty medicines and is also at the origin of pharmacokinetic interactions (variation of medicine concentration) by transport modification.

Symptoms and Treatments:

We actually know the mechanism of this racial sensibility : a transfer of the gene MDR1 which codes for the glykoprotein P, the protein of transport which allows the discharge of medicines outside nerve cells. The deficiency of this efflux protein pull the accumulation of avermectines (paralysing molecule) in the central nervous system. For Collies, the homozygous transfer of the MDR1 gene can affect 35 to 48 % of the staff tested (with 32 to 42 % of "carriers", heterozygous for this gene).
Moreover, it is possible that the dogs of the other races reacting to usual doses are "punctually" carrier of this transfer.

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