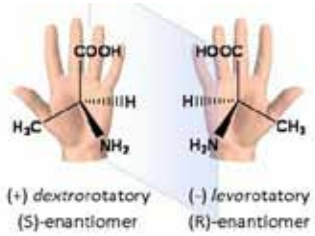
WHAT IS THE DIFFERENCE BETWEEN CLOPROSTENOL AND D-CLOPROSTENOL?

Cloprostenol:

Cloprostenol is a synthetic prostaglandin, which is considered to be the most powerful luteolytic molecule known so far. It has a high affinity for ovarian and uterine receptors and reduced undesirable effects on other tissues. Within the Cloprostenol molecule we have two different isomers: **D-Cloprostenol** and **L-Cloprostenol.**

D-Cloprostenol, L-Cloprostenol:

D-Cloprostenol is the **dextrorotatory isomer** of Cloprostenol and **L-Cloprostenol** is the **levorotatory isomer.** The following image illustrates the dextrorotatory and levorotatory definition.



If a compound is dextrorotatory, its mirror image counterpart is levorotatory.

Composition:

When a product contains **Cloprostenol** it means that the composition is **D and L Cloprostenol.** When a product contains **D-Cloprostenol**, as our **Gestavet Prost** does, there are only dextrotatory forms (D-Cloprostenol) in its composition.

Ovarian receptors have 180 times higher affinity for D-Cloprostenol than for the racemic form (DL-Cloprostenol) and uterine receptors have 10 times higher affinity for D-Cloprostenol than for DL-Cloprostenol and therefore dextrorotatory isomer has a biological activity 3.5 times higher than the D-L form.

Levorotatory isomer not only has no luteolytic effect, but also creates an esteric impediment in the receptors, impeding the action of the dextrorotatory isomer resulting on higher dosage when using DL-Cloprostenol and leading to more collateral effects because of its action on other tissues (intestines, vascular system etc).

REPRODUCTION HORMONE; D-CLOPROSTENOL IN AN INJECTABLE SOLUTION.

Summary:

The following table summarises the total quantity of the different active substances necessary to induce luteolysis:

COMPOUND	NEEDED QUANTITY TO INDUCE LUTEOLYSIS	COMPARATIVE ACTIVITY
D-Cloprostenol	0.150 mg	1
Cloprostenol	0.5 mg	3,33
Alfaprostol	8 mg	50
Luprostiol	15 mg	100
Dinoprost	25 mg	166,66

This is not a minor advantage and therefore helps to show the qualities of Gestavet Prost (D-Cloprostenol):

- Decrease collateral effects that other prostaglandins can induce.
- Decrease the dosage of prostaglandin needed.

Montaser and Desouky (2016) showed that the use of D-Cloprostenol caused a faster decline of progesterone levels than either DL-Cloprostenol or dinoprost. In addition follicule size post treatment was greater as was first service conception.

Table 1: Results of treatment with different prostaglandins.

PROSTAGLANDIN	CONCENTRATION	FOLLICLE SIZE (mm)	1ST SERVICE CONCEPTION
Dinoprost	25mg	11.17	10%
DL-Cloprostenol	500µg	11.53	30%
D-Cloprostenol	150µg	15.5	40%

References:

Montaser A M and El-Desouky A M. 2016. Effect of Dinoprost Tromethamine, Cloprostenol and D-Cloprostenol on progesterone concentration and pregnancy in dairy cattle. Journal of Agriculture and Veterinary Science 9: 2. Pp 64-67.