

# 18<sup>th</sup> Annual Pharmaceutical and Chemical Analysis Congress

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## *In vitro* evaluation of intimate gels: Application of nine marketed formulations

S Bennis<sup>1</sup>, M Alami Chentoufi<sup>1</sup>, A Cheikh<sup>2</sup>, H Miftah<sup>3</sup>, M Oulad Bouyahya Idrissi<sup>1</sup>, M Draoui<sup>1</sup> and M Bouatia<sup>1</sup><sup>1</sup>Mohammed V University, Morocco<sup>2</sup>Abulcasis University, Morocco<sup>3</sup>Pediatric Hospital, Morocco

**Background:** The intimate area is a delicate ecosystem characterised by an acid pH. The use of intimate gel helps balance vaginal pH level, which in turn helps in preventing itchiness and bacterial infection. Given the multitude of intimate gels on the market, it would be interesting to have quantitative techniques to evaluate the pH of these products.

**Purpose:** To evaluate the behavior of intimate gels in the presence of an increasing amount of acidity *in vitro* and to demonstrate their physiological behavior.

**Material & Methods:** We studied *in vitro* the behaviour of nine intimate gels. For this, 5 ml of the gel was diluted in 10 ml of distilled water, to which were added increasing amounts of 0.1 N HCl in increments of 0.1 ml every 30 s up to a total acid volume of 4 ml. The variation of pH in the mixture was followed by pH-metry. Each test was repeated three times.

Characteristics of the studied intimate gels are shown in table 1.

Intimate gel	Characteristics
gel 1	Alkaline pH, with Burdock, calmes irritations.
gel 2	Alkaline pH, with Melaleuca Alternifolia, for anti-mycosiques treatments.
gel 3	Acid pH, containing Citronellol, used in intimate washing during menstruation.
gel 4	Acid pH, with natural active ingredients extracted from milk, used during the menstrual period.
gel 5	Neutral pH, with Chlorure de Benzalkonium, used for cleaning the intimate mucosa
gel 6	Alkaline pH, enriched with Burdock, for irritated skin.
gel 7	Acid pH (3, 5), with sage, antiseptic that provides a toning effect.
gel 8	Neutral pH, with Burdock and Calendula, used for vaginitis.
gel 9	Alkaline pH (8), with chlorhexidine and calendula extract, adjuvant of antimycosis treatments.

Table : Characteristics of the studied intimate gels

**Results:** The *in vitro* behaviour of nine intimate gels in the presence of increasing amounts of 0.1 N HCl is represented in figure 1.

**Conclusion:** According to the results, the pH of the gels 7, 8, 3, 4, 5, stabilizes around 3 which are compatible with the pH of the vaginal flora. They can be prescribed for daily use when no disorder is present. Regarding gels 1, 2 and 6 which have a slightly alkaline pH (pH between 7 and 8), they can be prescribed in case of thrush. The gel 9 which pH is alkaline and stabilizes at pH 6 may be prescribed for vaginal mycosis caused by candida.

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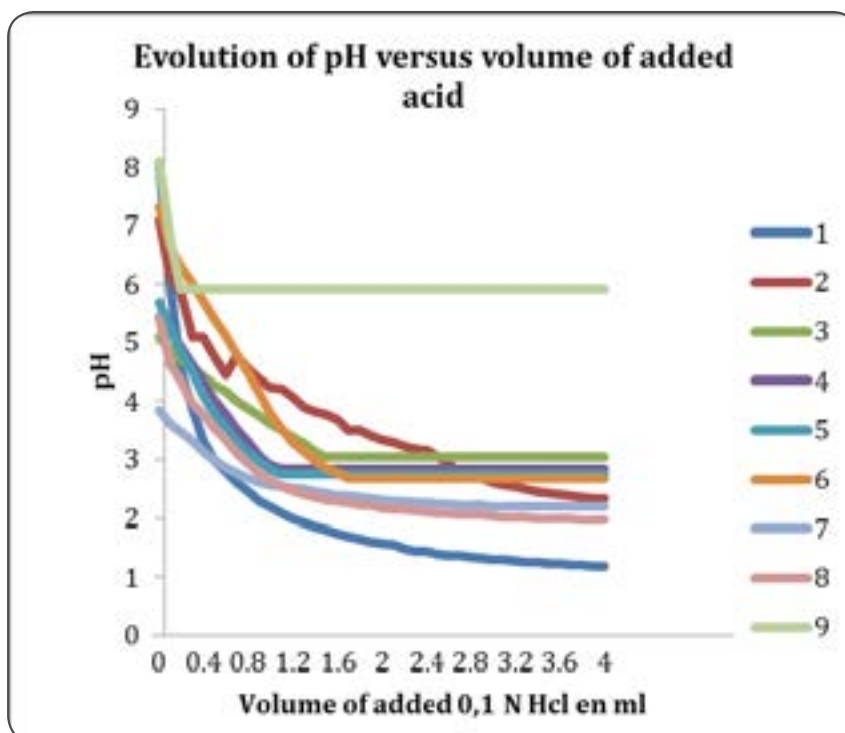


Figure: Behaviour of intimate gels studied in the presence of increasing of 0.1 N HCl.

soukainabennis90@gmail.com

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