LACTASE
Enzima digestiva na clivagem da lactose
http://aformulabr.com.br/qrcode/lactaseafv01.pdf
**LACTASE**

Enzima digestiva na clivagem da lactose

**DESCRIÇÃO**

A Lactase é a enzima responsável pela hidrólise da lactose, obtida através da fermentação de uma cepa selecionada e específica de *Aspergillus orizae*.

**MECANISMO DE AÇÃO**

A molécula da lactose é grande e complexa para atravessar a parede do intestino, assim necessita ser digerida em glicose e galactose pela ação da Lactase. A lactose não digerida passa ao intestino grosso, originando diarreia fermentativa e outros transtornos digestivos. A deficiência de Lactase ocorre com maior frequência na raça negra, podendo resultar em alactasia ou intolerância à lactose.

**INDICAÇÕES**

- Intolerância a lactose;
- Insuficiência de lactase (alactasia);

**DOSE USUAL**

Recomendação oral de 1750 a 9000 unidades FCC (ou ALU) de Lactase ao dia, administrados 15 minutos antes da ingestão de leite ou derivados.

**SUGESTÕES DE FÓRMULAS**

<table>
<thead>
<tr>
<th>Lactase</th>
<th>Modo de uso</th>
<th>Indicação</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 % gotas orais qsp 30 mL</td>
<td>5 gotas, em água, quando ingerir alimentos com lactose.</td>
<td>alactasia.</td>
</tr>
<tr>
<td>8000 FCC</td>
<td>1 dose antes de ingerir alimentos que contêm lactose.</td>
<td>intolerância a lactose.</td>
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**PRINCIPAIS REFERÊNCIAS**


LACTASE

ESTUDOS CLÍNICOS

[Effect of exogenous lactase on the absorption of lactose and its intolerance symptoms].

The objective of this study was to evaluate the effects of lactase on lactose malabsorption and its intolerance symptoms, as well as the available way to improve lactose absorption. Healthy adults with a history of lactose intolerance were screened by 25 g lactose tolerance test. The individuals with higher H2 expired and/or lactose intolerance symptoms were selected as the subjects. Subjects were challenged twice with "400 ml low fat milk" and "400 ml low fat milk + 9000Fcc lactase“ separately in 3 days interval. The breath H2 concentration and intolerance symptoms were tested in 4 hours after the challenge. The results showed that exogenous lactase can significantly decrease the incidence of lactose malabsorption (the abnormal expiration of H2 decreased from 100% to 48.9%) and milk intolerance symptoms (from 51.1% to 13.3%). The results from this study demonstrate that lactose malabsorption and intolerance symptoms are resulted from the reduced enzyme activities of individuals, and the exogenous lactase can improve lactose absorption and intolerance symptoms. Lactose supplementation may be an available way to increase the dairy consumption and promote health of people.

Comparative effects of exogenous lactase (beta-galactosidase) preparations on in vivo lactose digestion.

Microbial-derived beta-galactosidase (beta-gal) enzyme preparations improve in vivo lactose digestion and tolerance through enhanced gastrointestinal digestion of lactose. Three different beta-gal preparations, Lactogest (soft gel capsule), Lactaid (caplet), and DairyEase (chewable tablet) and placebo were fed to lactose maldigesters with either 20 g or 50 g of lactose to compare the efficacy of these products and to further establish a dose-response relationship for use. All enzyme preparations dramatically reduced both the peak and total breath hydrogen production when fed with milk containing 20 g of lactose. Four capsules of Lactogest, two caplets of Lactaid, or two tablets of DairyEase (each treatment containing approx 6000 IU) reduced total hydrogen production significantly (P < 0.05) below that observed with two capsules of Lactogest (containing approx 3000 IU) in a stoichiometric manner. Symptoms were significantly (P < 0.05) less severe with all the beta-gal products. In contrast, with 50 g of lactose in water, peak and total hydrogen production was modestly, but not significantly reduced by the enzyme treatment. Furthermore, symptom scores for bloating, cramping, nausea, pain, diarrhea, and flatus were not different between treatments and the control. The 50-g lactose dose appeared to overwhelm the ability of either 3000 or 6000 IU of beta-gal to assist significantly with lactose digestion. Results from these studies demonstrate the relative equivalency of chewable, caplet, and soft-gel beta-gal products, based on IUs of enzyme fed.


OBJECTIVE: To evaluate the efficacy of the addition to milk, 5 min and 10 h before its consumption, of a lactase obtained from Kluyveromyces lactis in lactose malabsorbers with intolerance. DESIGN: Double-blind, placebo-controlled, crossover study. SETTING: University Hospital. SUBJECTS: In total, 11 male and 19 female (aged from 18 to 65 y, mean age 43.3 y) lactose malabsorbers with intolerance participated. INTERVENTIONS: Each patient underwent three H(2) breath tests, in a random order. We used 400 ml of cow's semiskimmed milk as substrate and a beta-galactosidase obtained from K. lactis. The test A was carried out adding to the milk the enzyme (3000 UI), 10 h before its consumption; the test B was performed adding the beta-galactosidase (6000 UI) 5 min before milk ingestion and the test C was made using placebo. We evaluated the maximum breath H(2) concentration, the cumulative H(2) excretion and a clinical score based on intolerance symptoms (bloating, abdominal pain, flatulence and diarrhoea). RESULTS: Our study showed a significant reduction of the mean maximum H(2) concentration after both test A (12.07 +/- 7.8 p.p.m.) and test B (13.97 +/- 7.99 p.p.m.) compared with test C (51.46 +/- 16.12 p.p.m.) (ANOVA F = 54.33, P < 0.001). Similarly, there was a significant reduction of the mean cumulative H(2) excretion after both test A (1428 +/- 1156 p.p.m.) and test B (1761 +/- 966 p.p.m.) compared with test C (5795 +/- 2707 p.p.m.) (ANOVA F = 31.46, P < 0.001).
We also observed a significant reduction of the mean clinical score after both test A (0.36 +/- 0.55) and test B (0.96 +/- 0.85) compared with test C (3.7 +/- 0.79) (ANOVA F = 106.81, P < 0.001). Moreover, with regard to the mean clinical score, there was a significant reduction after test A with respect to test B (Bonferroni's P = 0.03).

CONCLUSIONS: Our study shows that in lactose malabsorbers with intolerance, the lactase obtained from K. lactis can represent a valid therapeutic strategy, with objective and subjective efficacy and without side effects.

Efficacy of addition of exogenous lactase to milk in adult lactase deficiency.

The efficacy of lactase by Kluyveromyces lactis in hydrolyzing milk lactose and reducing milk intolerance symptoms was tested in 52 proved lactose malabsorbers. The enzyme was added to milk administered to the patients, and H2 breath excretion (as an index of carbohydrate malabsorption), was determined by gas chromatograph technique, and milk intolerance symptoms were recorded. H2 mean excretion was 78.3 +/- 5.49 ppm after administration of intact whole milk 500 ml (test A), 43.5 +/- 4.99 ppm when lactase 2000 U was added to milk 500 ml immediately before administration (test B); 36.7 +/- 5.01 ppm when milk 500 ml was incubated for 12 h with lactase 1000 U (test C), and 29.7 +/- 4.35 ppm when the incubation was prolonged for 24 h (test D). Symptoms score was: test A = 5.85 +/- 0.56, test B = 3.71 +/- 0.45, test C = 2.77 +/- 0.63, test D = 1.7 +/- 0.68. A correlation index of r = 0.44 (p less than 0.01) was obtained between reduction in H2 mean excretion and reduction in symptoms score of a single individual. The addition of this lactase to milk seems to be effective in correcting lactose malabsorption, thus representing a convenient approach in milk intolerance.

REFERÊNCIAS


