CONJUGATED LINOLEIC ACID (CLA)

This monograph is intended to serve as a guide to industry for the preparation of Product Licence Applications (PLA) and labels for natural health product market authorization. It is not intended to be a comprehensive review of the medicinal ingredient. It is a referenced document to be used as a labelling standard.

Note:
Text in parentheses is additional optional information which can be included on the PLA and product label at the applicant’s discretion. The solidus (/) indicates that the terms are synonyms or that the statements are synonymous. Either term or statement may be selected by the applicant.

Date: February 25, 2010

Background:

- There is insufficient evidence to support the use of Conjugated linoleic acid (CLA) as a weight loss aid. Consumers wishing to achieve weight loss should consult a health care practitioner prior to taking CLA.
- The use of the term “may” in the use or purpose statements reflects the uncertainty of the evidence. For example, some reviews have concluded that CLA does not significantly affect body fat mass.
- The claim “May help to support a modest improvement to body composition” refers to evidence showing that CLA may modestly reduce body fat. Weak evidence also demonstrates that CLA may help to modestly increase lean muscle mass.
- The recommendations for decreased caloric intake and increased physical activity are included as components of the use or purpose statements in order to provide a health context.
- Though CLA has been administered to subjects for up to two years, there is insufficient evidence to support any benefits beyond 6 months. As such, a duration of use of 6 months has been included on the monograph.
- CLA does not exert positive effects on any health risk biomarkers (e.g. LDL-cholesterol, HDL-cholesterol, plasma glucose, plasma insulin, etc.) and there is some evidence to suggest that its use may be unsafe in particular subpopulations. As such, mandatory risk information is required on the PLA and label to identify subpopulations at risk.
Proper name(s): Conjugated linoleic acid (Pariza 2004; Pariza et al. 2001)

Common name(s):
- Conjugated linoleic acid (Pariza 2004; Pariza et al. 2001)
- CLA (Pariza 2004; Pariza et al. 2001)

Source material(s):
- Synthetic (FDA 2007; Pariza et al. 2001), in the triacylglycerol form (Raff et al. 2009; FDA 2007; Gaullier et al. 2007; Gaullier et al. 2004; Kamphuis et al. 2003) (derived from processed safflower or sunflower oil)
- Synthetic (FDA 2007; Pariza et al. 2001), in the free fatty acid form (Gaullier et al. 2004) (derived from processed safflower or sunflower oil)

Route(s) of administration: Oral

Dosage form(s): The acceptable pharmaceutical dosage forms for oral administration include, but are not limited to, chewables (e.g. gummies, tablets), caplets, capsules, strips, lozenges, powders or liquids where the dose is measured in drops, teaspoons or tablespoons. This monograph is not intended to include foods or food-like dosage forms such as bars, chewing gums or beverages.

Use(s) or Purpose(s): Statement(s) to the effect of:
- May help to support a modest reduction in fat mass (Raff et al. 2009; Gaullier et al. 2007; Watras et al. 2007; Pinkoski et al. 2006; Gaullier et al. 2004) when used with a program of reduced intake of dietary calories and increased physical activity.
- May help to support a modest improvement to body composition (Raff et al. 2009; Gaullier et al. 2007; Pinkoski et al. 2006; Watras et al. 2007; Gaullier et al. 2004; Kamphuis et al. 2003) when used with a program of reduced intake of dietary calories and increased physical activity.

Dose(s): 3-5 g, per day (Raff et al. 2009; Gaullier et al. 2007; Pinkoski et al. 2006; Watras et al. 2007; Gaullier et al. 2004; Kamphuis et al. 2003)
Notes:
- Additional information not to be submitted with the compendial PLA (although the quantity of CLA-rich oil may be requested at the NHPD’s discretion): Approximately 4-6.5 g CLA-rich oil provides 3-5 g CLA.
- See Table 1 in the Specifications section for detailed information on the required proportions of the $c_9t_{11}$ and $t_{10}c_{12}$ CLA isomers.

Directions for use: Optional: Take with food (Watras et al. 2007; Kamphuis et al. 2003).

Duration(s) of use: Consult a health care practitioner for use beyond 6 months (Gaullier et al. 2007; Watras et al. 2007; Gaullier et al. 2005; Gaullier et al. 2004).

Risk information: Statement(s) to the effect of:

Caution(s) and warning(s):
- Consult a health care practitioner prior to use if your goal is to achieve weight loss.
- Consult a health care practitioner prior to use if you are pregnant or breastfeeding.
- Consult a health care practitioner prior to use if you are obese or have cardiovascular disease (CVD) risk factors (e.g. high blood pressure, high cholesterol and/or triglycerides) (Tholstrup et al. 2008; Gaullier et al. 2007; Steck et al. 2007; Larsen et al. 2006; Taylor et al. 2006; Gaullier et al. 2005; Smedman et al. 2005; Gaullier et al. 2004; Basu et al. 2000a; Basu et al. 2000b).

Contraindication(s): Do not use if you have CVD, diabetes, metabolic syndrome or insulin resistance (Tholstrup et al. 2008; Gaullier et al. 2007; Steck et al. 2007; Larsen et al. 2006; Taylor et al. 2006; Gaullier et al. 2005; Smedman et al. 2005; Gaullier et al. 2004; Moloney et al. 2004; Basu et al. 2000a; Basu et al. 2000b).

Known adverse reaction(s): Some people may experience gastrointestinal upset (Gaullier et al. 2007; Pinkoski et al. 2006; Blankson et al. 2000; Berven et al. 2000).

Non-medicinal ingredients: Must be chosen from the current NHPD Natural Health Products Ingredients Database and must meet the limitations outlined in the database.
Specifications:

- The finished product must comply with the minimum specifications outlined in the current NHPD Compendium of Monographs.
- The CLA-rich oil must comply with the chemical specifications as outlined in Table 1 below.
- The maximum peroxide value derived from CLA-rich oil must be \( \leq 1 \text{ meq O}_2/\text{kg} \) and be in accordance with the methods set out by the American Oil Chemists’ Society (AOCS) and/or Pharmacopoeial analytical methods. This specification is necessary to ensure the oxidative stability of the CLA (FDA 2007).

Table 1  Chemical specifications for CLA-rich oil (FDA 2007)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLA total</td>
<td>( \geq 78% )</td>
</tr>
<tr>
<td>CLA (c9t11 + t10,c12 isomers)</td>
<td>( \geq 74% )</td>
</tr>
<tr>
<td>CLA c9,t11 isomers</td>
<td>( \geq 36% )</td>
</tr>
<tr>
<td>CLA t10,c12 isomers</td>
<td>( \geq 36% )</td>
</tr>
<tr>
<td>CLA trans, trans</td>
<td>( \leq 3% )</td>
</tr>
</tbody>
</table>

References cited:


References reviewed:


Bos G, Snijder MB, Nijpels G, Dekker JM, Stehouwer CD, Bouter LM, Heine RJ, Jansen H.


