



# Study summary

# Effect of Benolea® (EFLA®943) in adult twins with mild hypertension

## **Objective**

The aim of this study was to assess the effect of Benolea<sup>®</sup> (EFL<sup>®</sup>A 943) patented Olive Leaf Extract as food supplement for adults with mild hypertension.

### Study design

The study was conducted by the HealthTwiSt GmbH, D-Berlin, in 2004/2005. Enrolled were 20 monozygotic twin pairs aged 18-60 with blood pressure values above the optimal level (RRdiast.: ≥80 mmHq; RRsyst.: ≥120 mmHq). Tablets contained 500 mg of Benolea® as active principle. After screening, twin pairs were randomly divided into two groups. In Group 1 non-pharmacological measures (dietary recommendations, lifestyle change) were compared to the daily consumption of one tablet in the co-twin (control vs. 500 mg Benolea®). In Group 2 dose effects were tested between twins taking one tablet once daily compared to the co-twin taking one tablet twice daily (500 mg vs. 1000 mg Benolea<sup>®</sup>). The test period lasted 8 weeks. Blood pressure was recorded once per week starting at baseline. Blood samples were collected at baseline and after 4 and 8 weeks and lipid profiles measured.

Statistical evaluation of collected data was performed for intra-pair differences according to the co-twin control design. Side/adverse effects were recorded.

# Results

# Effect on blood pressure

Analysis of blood pressure values resulted in reduction of blood pressure values during the study period. The following statistically significant results were found: in Group 1, the maximal blood pressure decrease that occurred was of 6 mmHg systolic and 5 mmHg diastolic.



Figure 1: Reduction of blood pressure values, systolic (A) and diastolic (B) with respect to initial values (study start). Data represent mean of differences within twin pairs of Group 1 (■), and Group 2 (■). (\*statistically signifi- cant difference, p < 0.05).</p>

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The maximal reduction amounted to 13 mmHg systolic and 5 mmHg diastolic in Group 2.

### Effect on serum lipids

Among the parameters of the lipid profile, a significant reduction of LDL cholesterol by 0.5 mmol/l (19.3 mg/dl) was observed in Group 1 at 8 weeks. An additional decrease of 0.38 mmol/l (14.7 mg/dl) resulted with 1000 mg Benolea<sup>®</sup> (Group 2).



Figure 2: Reduction of mean LDL cholesterol values with respect to baseline (study start), after 4 and 8 weeks of intervention, respec- tively. Data represent means ± SEM of LDL differences within twin pairs of Group 1 (■), and Group 2 (■). (\* statistically significant difference, p < 0.05).</p>

#### Safety and tolerability

The extract was well tolerated throughout the study period.

### Conclusion

The results of the study support the beneficial effect of the Olive Leaf Extract Benolea<sup>®</sup> as dietary supplement in the context of a non-pharmacological approach for the treatment of mild hypertensive conditions.

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