



# Detailed Documentation of One Lipolysis Treatment: Blood Values, Histology, and Ultrasound Findings

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This case study on a 54-year-old woman shows the exact progression of one abdominal lipolysis treatment with a phosphatidylcholine compound mixture. The mixture consists of phosphatidylcholine 50 mg/mL, NaCl 0.9% as diluent (50%), buflomedil (in a concentration of 5%), and vitamin B complexes (B<sub>2</sub>, B<sub>3</sub>, B<sub>6</sub>; 1%). The patient's weight, blood values, ultrasound findings, measurement, and histologic findings before the treatment, shortly after treatment, and 3 days, 10 days, 4 weeks, and 8 weeks after treatment are documented. (*Aesthetic Surg J* 2007;27:204–211.)

This article presents a detailed case study of 1 abdominal lipolysis treatment. The patient was an athletic 54-year-old woman who was bothered by localized fat in her upper and lower abdomen for some years (Figure 1). Her medical history was significant only for hepatitis B when she was 19.

## Pretreatment Evaluation

One day before treatment, patient evaluation revealed the following: Blood values were as follows: erythrocytes, 5.22; hemoglobin 15.8; hematocrit 44.6; MCV 85.5; MCH 30.3; RDW 11.8; and normal erythrocyte structure.

Leucocytes, 5.2; normal differential cell picture. Thrombocytes, 265; bilirubin, total 0.9; direct, 0.3; indirect, 0.6; GOT, 22; GPT, 43 (the patient's GPT levels had consistently been slightly above normal ever since she contracted hepatitis); gGT, 31; cholesterol, 234 mg/dL; HDL, 70.7; LDL, 147; UA, 4.5; creatinine, 0.81; CRP, 0.001; hormones and protein electrophoresis, NAD. The patient's weight was 64.4 kg (142 lb). Her lower abdominal circumference, measured horizontally at 9 cm below the navel, was 98 cm (38.58 inches).

Ultrasound examination showed the thickness of the subcutis to be 18.2 mm on the right side and 20 mm

the left side (Figure 2). Echodensity of the subcutaneous fatty tissue was normal. Histology showed adipocytes subdivided by thin septa of binding tissue (Figure 3).

## Treatment Protocol

The treatment mixture consisted of phosphatidylcholine 50 mg/mL, NaCl 0.9% as diluent (50%), buflomedil (in a concentration of 5%), and vitamin B complexes (B<sub>2</sub>, B<sub>3</sub>, B<sub>6</sub>; 1%). A total of 103.5 mL of compound was injected, 40 mL in the abdominal region above the navel and 63.5 mL below the navel. This dose level was developed through clinical experience involving 740 cases, taking into consideration the clinical effect and expected side effects. Blood tests were conducted on more than 100 patients to confirm the nontoxicity of this dose. Eighty injections were administered on the upper abdomen, and 120 injections were administered on the lower abdomen, with needles of 27-gauge thickness and 12-mm length. The injection depth was 12 mm.

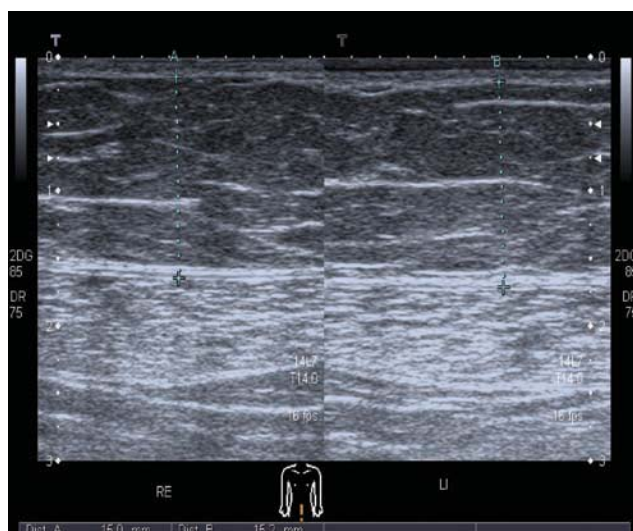
During the injection procedure, pain was described by the patient as being similar to mosquito bites. Five minutes after the last injection, she described the pain as being the same as the burning sensation from stinging nettles and said that the injected areas felt hot (Figure 4).

## Posttreatment Evaluation

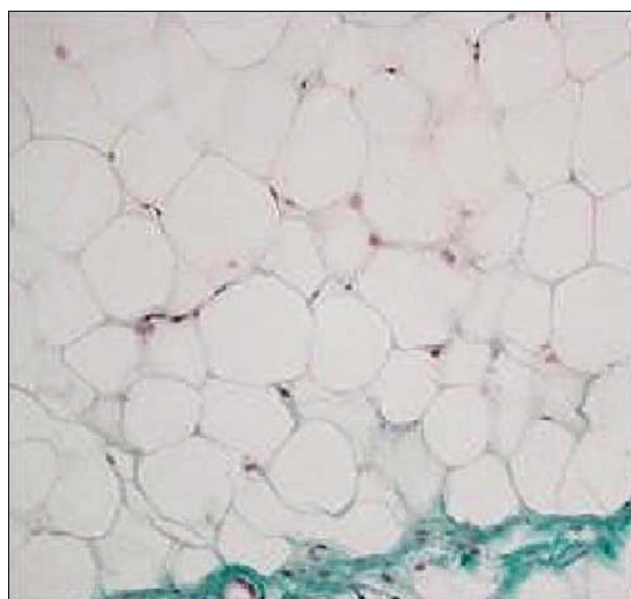
Maximum swelling and discomfort took place 6 hours after the treatment (Figure 5). The patient cooled her abdomen with cool-packs and took 1 tablet of Voltarol Rapid (diclofenac) before sleeping. Pain was described as quite bearable, with some discomfort because of swelling during the first night. At 6 hours posttreatment, the circumference of the lower abdomen was 110 cm (43.3 inches). Twenty-four hours after treatment, the patient experienced no pain and far fewer local reactions, although the treated areas were still sensitive to touch, and there was



**Figure 1. A, B,** Pretreatment views of a 54-year-old woman. Her lower abdominal circumference was 98 cm (38.58 inches).



**Figure 2.** Pretreatment ultrasound scan shows subcuticular thickness of 18.2 mm on the right side, 20 mm on the left side, and normal echodensity of subcutaneous fatty tissue.



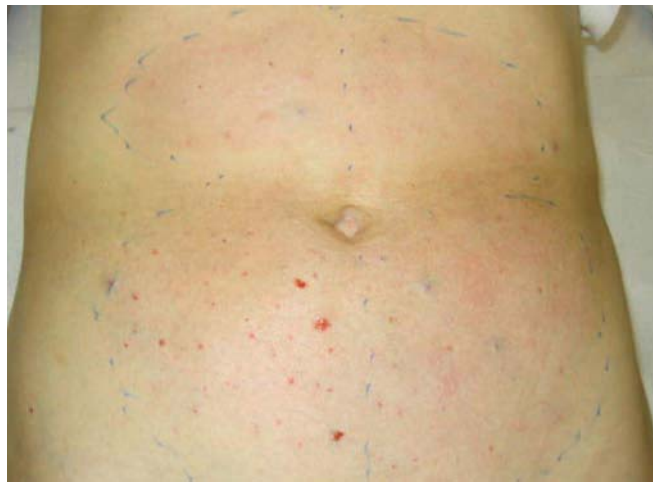
**Figure 3.** Histologic view shows adipocytes divided by thin septa of binding tissue.

slight discomfort in the swollen areas (Figure 6). The lower abdominal circumference was 102 cm (40.2 inches). At 32 hours after treatment, the lower abdominal circumference was 100 cm (39.37 inches), no pain or swelling was present, and reddening had diminished (Figure 7).

On the third posttreatment day (Figure 8), the lower abdominal circumference had decreased to the pretreatment level of 98 cm (38.58 inches). The patient's weight was also at its pretreatment level. The patient felt no pain or discomfort. Ultrasound examination (Figure 9)

showed the subcutis to be hyperechoic, with a thickness of 21.8 mm on the right side and 22.3 mm on the left side. Histologic examination (Figure 10) showed a clear confluence, the beginning of dissolution of adipocyte membranes, and vascularization.

By the tenth posttreatment day, no swelling or redness was present, and no local reactions were seen (Figure 11). The lower abdominal circumference had decreased to 94 cm (37 inches), and the patient's weight was down to 62.2 kg (136.8 lb). Blood values



**Figure 4.** Posttreatment view immediately after injections.



**Figure 5. A, B,** Posttreatment views 6 hours after injections. The lower abdominal circumference was 110 cm (43.3 inches).



**Figure 6. A, B,** Posttreatment views 24 hours after injections. The lower abdominal circumference was 102 cm (40.2 inches).

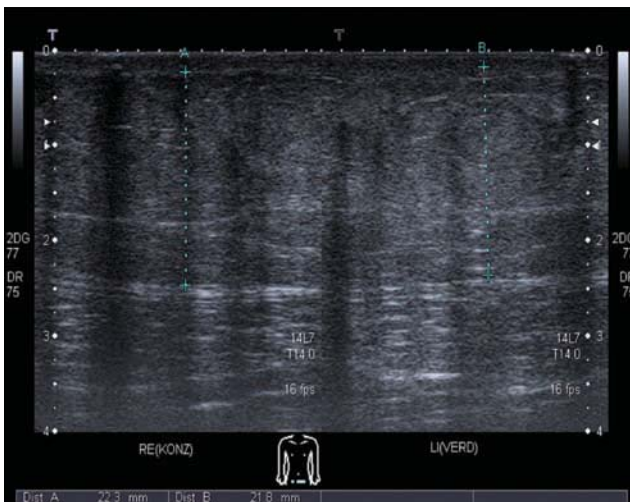




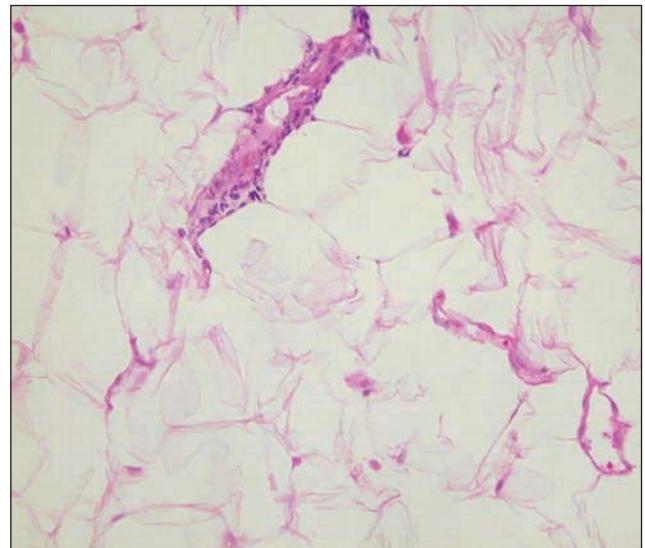
**Figure 7. A, B,** Posttreatment views 32 hours after injections. The lower abdominal circumference was 100 cm (39.37 inches).



**Figure 8. A, B,** Posttreatment views 3 days after injections. The lower abdominal circumference was 98 cm (38.58 inches).



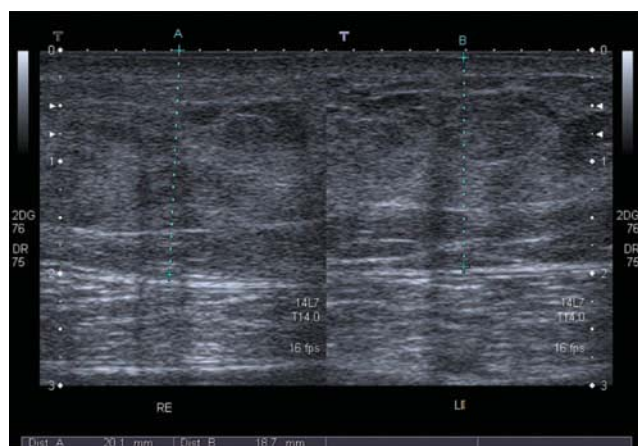
**Figure 9.** Ultrasound scan 3 days after injections shows hyperechoic subcutis.



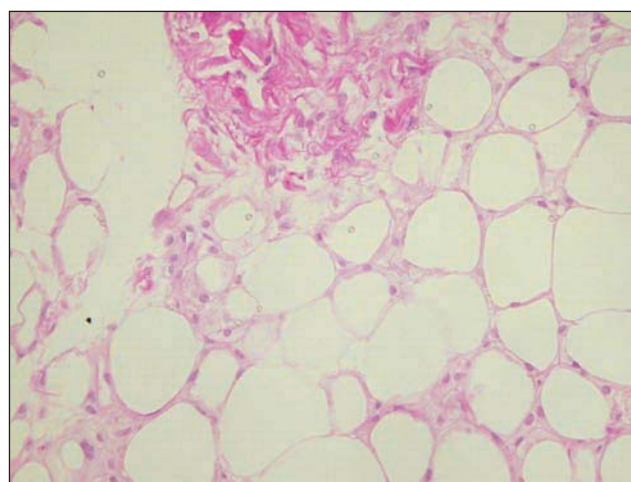
**Figure 10.** Histologic view 3 days after injections shows clear confluence, beginnings of dissolution of adipocyte membranes, and vascularization.



**Figure 11. A, B,** Posttreatment view 10 days after injections. The lower abdominal circumference was 94 cm (37 inches).



**Figure 12.** Ultrasound scan 10 days after injection shows clear destruction of adipocyte masses.



**Figure 13.** Histologic view 10 days after injections clearly shows destruction of lipocytes.

were unaltered. Ultrasound examination (Figure 12) showed clear destruction of adipocyte masses, whereas histologic examination (Figure 13) demonstrated destruction of lipocytes.

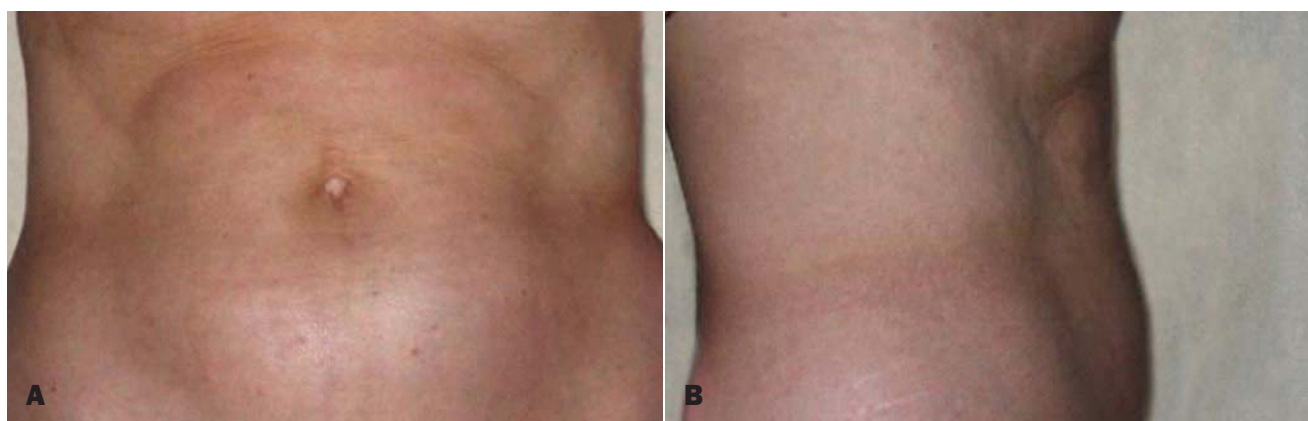
By day 28, (Figure 14) no local reactions were visible. The lower abdominal circumference was 91 cm (35.8 inches). The patient's weight and blood values were unchanged. Ultrasound (Figure 15) examination revealed map-like hyperechogenic areas with a clear reduction of fat volume. Subcutical thickness was 13.55 mm on the right side and 13.7 mm on the left side. Histologic study (Figure 16) showed adipocytes in lysis and active lipophages. The process was active and similar to histologic results on day 10.

On day 56, 8 weeks after treatment (Figure 17), the lower abdominal circumference was reduced to 84 cm (33.1 inches). The patient's weight was 64.2 kg (141.5 lb). Ultrasonography (Figure 18) showed that subcuticular thickness was 12 mm on the right side and 11.4 mm on the left side. Histologic study demonstrated normal fat cells without peculiarities. Blood values were unaltered throughout the evaluation period.

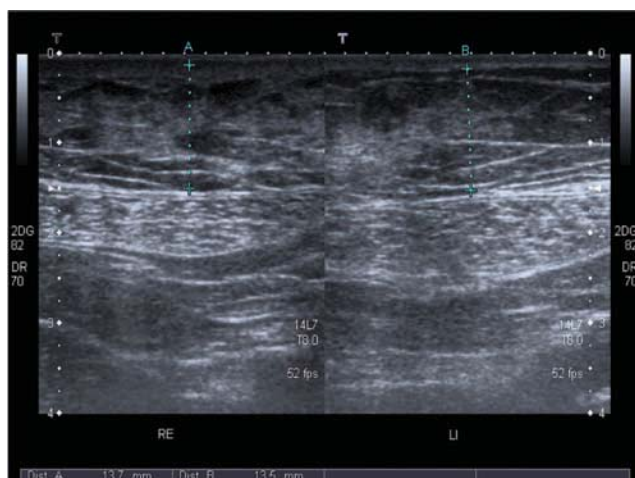
## Conclusion

The results obtained in this case after only one injection lipolysis treatment session were exceptionally good (the reduction in circumference was 14 cm). An average reduction of 4 cm per session should be obtainable by

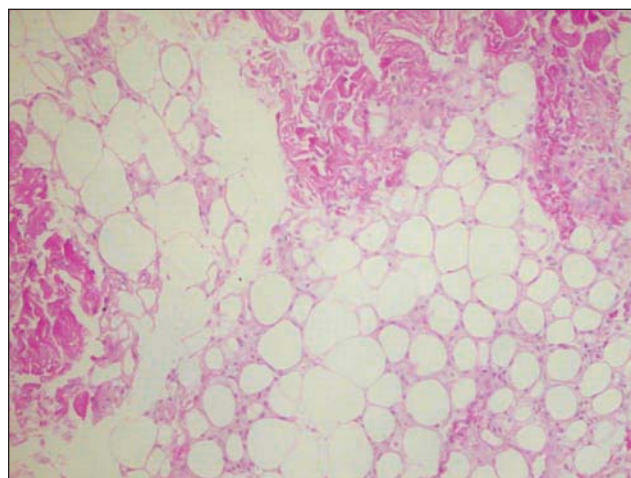




**Figure 14. A, B,** Posttreatment views 28 days after injections. The lower abdominal circumference was 91 cm (35.8 inches).



**Figure 15.** Ultrasound view 28 days after injections shows map-like hypoechogenic areas with clear reduction of fat volume.



**Figure 16.** Histologic view 28 days after injections shows adipocytes in lysis, active lipophages.

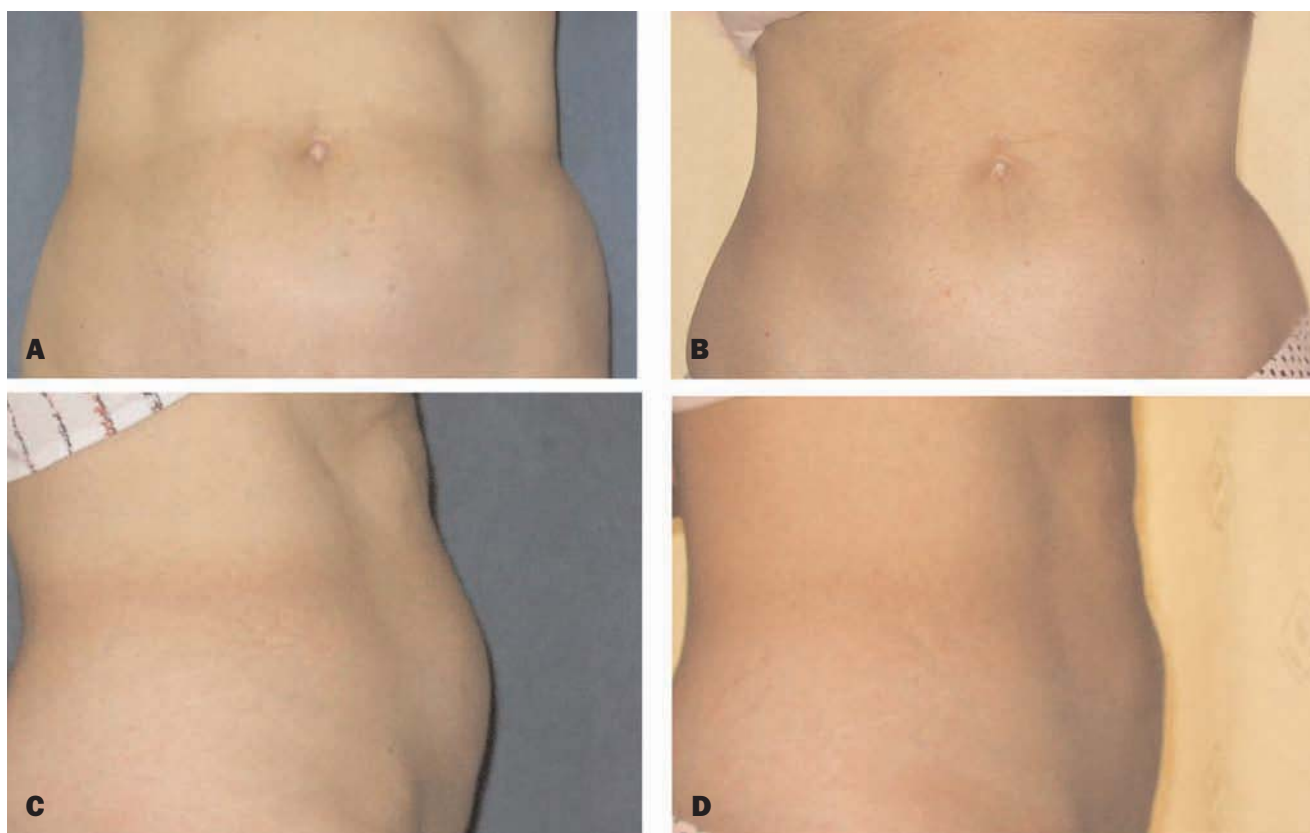
every physician. Overall, 16% of all patients need only one treatment, 72% need 2 treatments, 10% need 3 treatments, and 2% need 4 treatments to achieve a satisfactory result for both the patient and the physician. The rate of nonresponsive patients treated in 2005 by the author was almost zero. There are now more than 7000 documented cases by the lead author (FH) and more than 80,000 recorded with Network Lipolysis, which, without exception, show no unexpected side effects.

To date, this treatment has proved to be a safe and effective therapy in the removal of smaller fat accumulations that are resistant to exercises and dieting. Long-

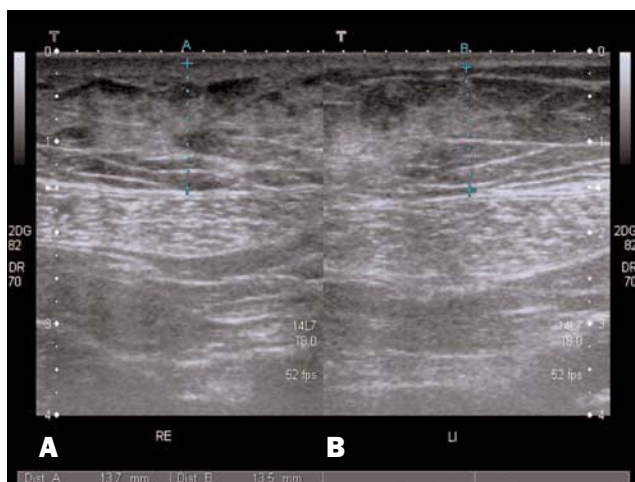
term studies in Europe, over a time period of 3 years, have shown no adverse reactions, and no return of fat could be observed.

Studies concerning the true biological mechanism of action of injectable phosphatidylcholine in fat-tissue are, at present, being undertaken at the University of Regensburg and elsewhere. Research in the United States is directed by Dr. Diane Duncan, the US representative of Network Lipolysis. ■

*The author received no financial support from and has no commercial interest in the manufacturer of the products discussed in this article.*



**Figure 17.** A, C, Pretreatment views of the patient. B, D, Posttreatment views 8 weeks after injections. The patient's lower abdominal circumference decreased from 98 cm (35.58 inches) before treatment to 84 cm (33.1 inches) 8 weeks after treatment.



**Figure 18.** Ultrasound scan shows subcuticular thickness of 12 mm on the right side (A) and 11.4 mm on the left side (B) 8 weeks after injections.

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1090-820X/\$32.00

doi:10.1016.j.asj.2007.01.010