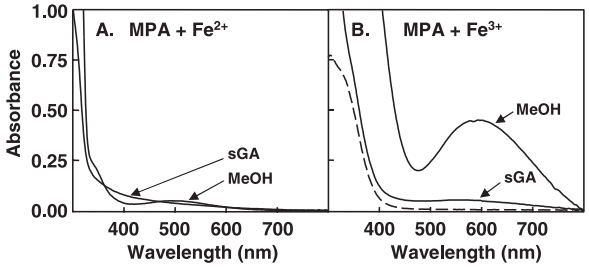

FIGURE 1. Binding of iron to MPA in simulated gastric acid (sGA). (A) MPA (1 mM) and Fe^{2+} (1 mM) were mixed in sGA and the UV/Vis spectrum obtained. For comparison the spectrum obtained from MPA (1 mM) and Fe^{2+} (1 mM) in methanol (MeOH) is shown. (B) MPA (1 mM) and Fe^{3+} (1 mM) were mixed in sGA and the UV/Vis spectrum obtained. The spectrum obtained for MPA (1 mM) and Fe^{3+} (1 mM) in methanol is shown (black line). The dashed line shows the addition of Fe^{3+} to sGA in the absence of MPA.

formed to any great extent or is not stable. Figure 1B shows that the addition of Fe^{3+} to MPA (both 1 mM) in methanol results in an intense 590-nm peak, suggesting that MPA is able to coordinate Fe^{3+}. This intense peak is not observed when Fe^{3+} and MPA are in sGA, only a very weak absorbance is apparent (the addition of Fe^{3+} to sGA alone had no effect). Thus there is only very limited coordination of Fe^{3+} by MPA in sGA.

In conclusion, although we observed evidence for iron/MPA complexes when prepared in methanol, we were unable to see similar effects when we combined MPA and iron in sGA. The lack of MPA-iron(II) complexes in sGA supports the trials that show no effect on MPA availability when MMF and iron supplements are coadministered (*3–5*).

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C.E.J. is supported by a University of Queensland Postdoctoral Fellowship and a University of Queensland Early Career Researcher grant.

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Received 24 June 2007.
Accepted 27 June 2007.

ISSN 0041-1337/07/8406-799
DOI: 10.1097/01.tp.0000282871.78905.35

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Donor-Derived Small Cell Lung Carcinoma in a Transplanted Kidney

Due to immunosuppression, transplant patients are at risk for developing carcinomas or lymphomas in both the transplanted organ and other sites. There have been few reported cases in which transplanted organs contained occult tumors that subsequently developed metastases (*1–5*). We herein present a case of a donor-derived small cell lung carcinoma (SCLC) in both transplanted kidneys.

In December 2005, a 46-year-old male nonsmoker with renal insufficiency due to chronic glomerulonephritis received a cadaver kidney. Adequate postoperative kidney function was achieved with a triple immunosuppressive regimen consisting of prednisone, mycophenolate mofetil (MMF), and tacrolimus. In September 2006, a routine exam showed raised creatinine levels of 1.6 mg/dL (141.4 μmol/L). Percutaneous biopsy revealed foci of tubulointerstitial rejection (Banff grade Ia) and sclerosing, nonactive transplant vasculopathy. Moreover, tumor infiltrates were present, which were found immunohistochemically to be small cell lung carcinoma (expression of pan-cytokeratin, CD56, synaptophysin, and TTF-1 in the tumor cells, no expression of lymphatic markers; Fig. 1A, B). Abdominal magnetic resonance imaging showed tumor masses in the transplanted kidney and enlarged para-aortal lymph nodes. By thorough clinical staging, no further tumor masses were found.

The tumorous kidney was immediately explanted. Macroscopically, it contained several tumor nodes of up to 2 cm in size (Fig. 1C). Tumor was also present in nine peri-iliacal lymph nodes, thus adjuvant chemotherapy was administered (carboplatin and etoposide). At present, the patient is doing well, with enlarged para-aortal lymph nodes.

For molecular investigations, fresh tissue samples of tumor and tumor-free kidney were taken from the nephrectomy specimen and snap frozen. DNA of the kidney and tumor DNA were extracted. A recipient blood sample (ethylenediamine tetraacetic acid) served as control.

To identify the tumor's origin (donor or recipient), Profiler-Analysis was performed using the AmpFLSTR-Profiler Plus-PCR-Amplification Kit (Applied Biosystems). Nine tetranucleotide STR-loci and the amelogenin locus were co-amplified and analyzed using a multicolor approach on a capillary sequencer (ABI-3100) and Genotyper software. Analysis showed that the STR-loci of the recipient and tumor differed (Fig. 1D), proving that the cancer tissue

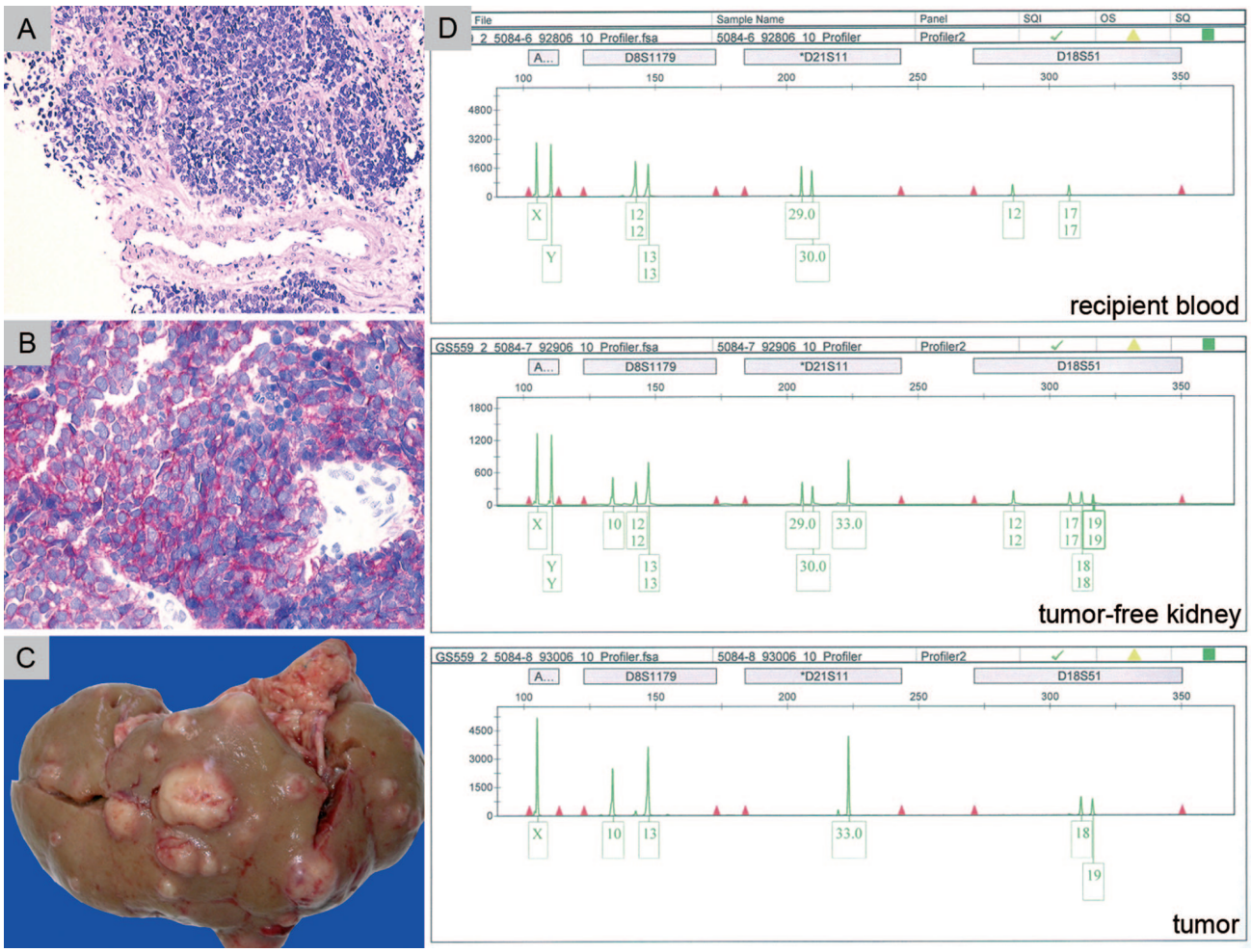

FIGURE 1. (A) Biopsy specimen of the transplanted kidney showing dense infiltrates of small cell lung carcinoma (SCLC; hematoxylin and eosin, ×50). (B) Immunohistochemistry of the biopsy: SCLC-cells with expression of the neuroendocrine marker CD56 (×200). (C) Macroscopic aspect of the explanted kidney showing multiple tumor nodules up to 2.5 cm in size. (D) Molecular profiling findings of three of the nine microsatellite loci investigated: recipient blood sample (upper diagram), tumor-free area of explanted kidney (middle diagram), and tumor sample (lower diagram). Differences in the marker profiles prove that the tumor was donor-derived. Note the chimeric profile pattern in the tumor-free kidney probe.

was donor-derived. The tumor-free kidney tissue revealed a chimeric pattern, suggesting that recipient cells had ingrown into the donor organ during the 9 months after transplantation.

An enquiry at Eurotransplant in Leiden revealed that the donor had been a 55-year-old male smoker with a history of alcohol abuse who had died of a spontaneous intracerebral bleeding. Because liver and pancreas showed alcohol-induced damages, no other organs than the kidneys were transplanted. The other transplantation center in Germany was informed where the contralateral kidney of the same donor had been transplanted. This 52-year-old male recipient was still asymptomatic but was also found to have small cell lung carcinoma in his transplanted kidney with metastatic spread to the iliopsoas muscle. After explantation of the tumorous kidney, this patient is alive under chemotherapy (carboplatin and etoposide).

In conclusion, we have reported a case of donor-derived small cell lung carcinoma 9 months after transplantation in the two patients who received transplanted kidneys. This is the first case in the literature in which the donor-origin of small cell lung carcinoma in a tumorous transplant has been proven by molecular profiling.

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Received 23 May 2007. Revision requested 9 June 2007.
Accepted 11 July 2007.

ISSN 0041-1337/000007/8406-800
DOI: 10.1097/01.tp.0000281402.55745.e6

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ERRATUM

An author name appeared incorrectly in the Letter to Editor entitled "N,N,N-Trimethylglycine (Betaine) Improves Analysis of CDR3 Diversification in Children Reconstituting Their Immune Repertoire After Hematopoietic Stem-Cell Transplantation" in the April 15, 2007 issue of *Transplantation*. The name Daniela Di Martino was incorrectly published as Daniela D, Martino. The correct author name and affiliation line reads as follows.

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The publisher regrets this error and any inconvenience it has caused.

1. Terranova MP, Di Michele P, Scuderi F, et al. N,N,N-Trimethylglycine (Betaine) improves analysis of CDR3 diversification in children reconstituting their immune repertoire after hematopoietic stem-cell transplantation. *Transplantation* 2007; 83: 996.