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(54) Title: ITERATIVE OPTICAL BASED HISTOLOGY

(57) Abstract: Femtosecond laser pulses are used to iteratively cut and image fixed as well as exsanguinated fresh tissue. Such images help to automate three-dimensional histological analysis of biological tissue. Cuts are accomplished with approximately 0.3 to 100 microJoule pulses to ablate tissue with one-micrometer precision. Permeability, immunoreactivity, and optical clarity of the remaining tissue is retained after pulsed laser cutting. Samples from transgenic mice that express fluorescent proteins retained their fluorescence to within micrometers of the cut surface.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/00777

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01N 33/53

US CL : 435/7.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/7.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,166,385 A (WEBB et al) 26 December 2000 (26.12.2000), see entire document	1-12, 19, 21
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Y		20, 22, 23, 24, 28-57
X, P	US 6,344,653 B1 (WEBB et al) 05 February 2002 (05.02.2002), see entire document	1-12, 19, 21

		13-18, 20, 22, 23, 24, 28-57
Y	US 6,325,792 B1 (SWINGER et al) 04 December 2001 (04.12.2001), see entire document	1-4, 11-20, 23, 24, 28, 48
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A		5-10, 21, 22, 25-27, 29-47, 49-57
Y	US 5,720,894 A (NEEV et al) 24 February 1998 (24.02.1998), see entire document	23-24, 28-57
Y	US 6,665,556 B1 (ALFANO et al) 16 December 2003 (16.12.2003), see entire document	23-24, 28-57

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☐ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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