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ORIGINAL ARTICLE

Different Biological Characteristics of Macrophages from BALB/c Mice and Severe Combined Immunodeficient Mice

Chong Luo [1, 2, 3], Yu Zhang [1, 2, 3], Xuemei Tang [1, 2, 3], Lan Yao [2, 3], Yating Wang [1, 2, 3], Xiqiang Yang [1, 2, 3]

[1] *Department of Rheumatology and Immunology, Children's Hospital of Chongqing Medical University, Ministry of Education Key Laboratory of Child Development and Disorders, Chongqing, P.R. China*
[2] *China International Science and Technology Cooperation Base of Child Development and Critical Disorders, Chongqing, P.R. China*
[3] *Chongqing Key Laboratory of Child Infection and Immunity, Chongqing, P.R. China*

SUMMARY

Background: **Our previous research has found that absence of lymphocytes during development may affect innate activity of immune cells. To better understand the effect of lymphocyte defects on macrophages during development, we compared the biological characteristics of peritoneal macrophages (PMa) from BALB/c and severe combined immunodeficient (SCID) mice.**
Methods: **Cytokines such as TNF-α, IL-6, and IL-10 produced by PMa and mRNA of those cytokines of PMa, phagocytosis of chicken red cells by PMa, and cell surface markers of PMa from BALB/c and SCID mice were tested. LPS was used as the stimulator.**
Results: **Compared with PMa from BALB/c mice, PMa from SCID mice produced more TNF-α, IL-6, and less IL-10 after LPS stimulation *in vitro* and exhibited decreased phagocytosis *in vivo* or *in vitro*. The MFI of cell surface markers, including TLR4, MHC-II and CD80/CD86, on PMa increased markedly after LPS injection *in vivo*, but was not significantly different between the two mouse strains.**
Conclusions: **Lymphocyte defects during development lead to increased inflammatory potential and decreased phagocytosis of PMa. If BALB/c and SCID mice are used as models to compare differences in infections and inflammation, the different biological characteristics of macrophages should be considered.**
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Correspondence:
Xiqiang Yang
Children's Hospital of
Chongqing Medical University
No 136, Zhongshan 2nd Road
Yuzhong District, Chongqing 400014
P.R. China
Phone/Fax: +86 023-63624479

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Supplementary Figures.

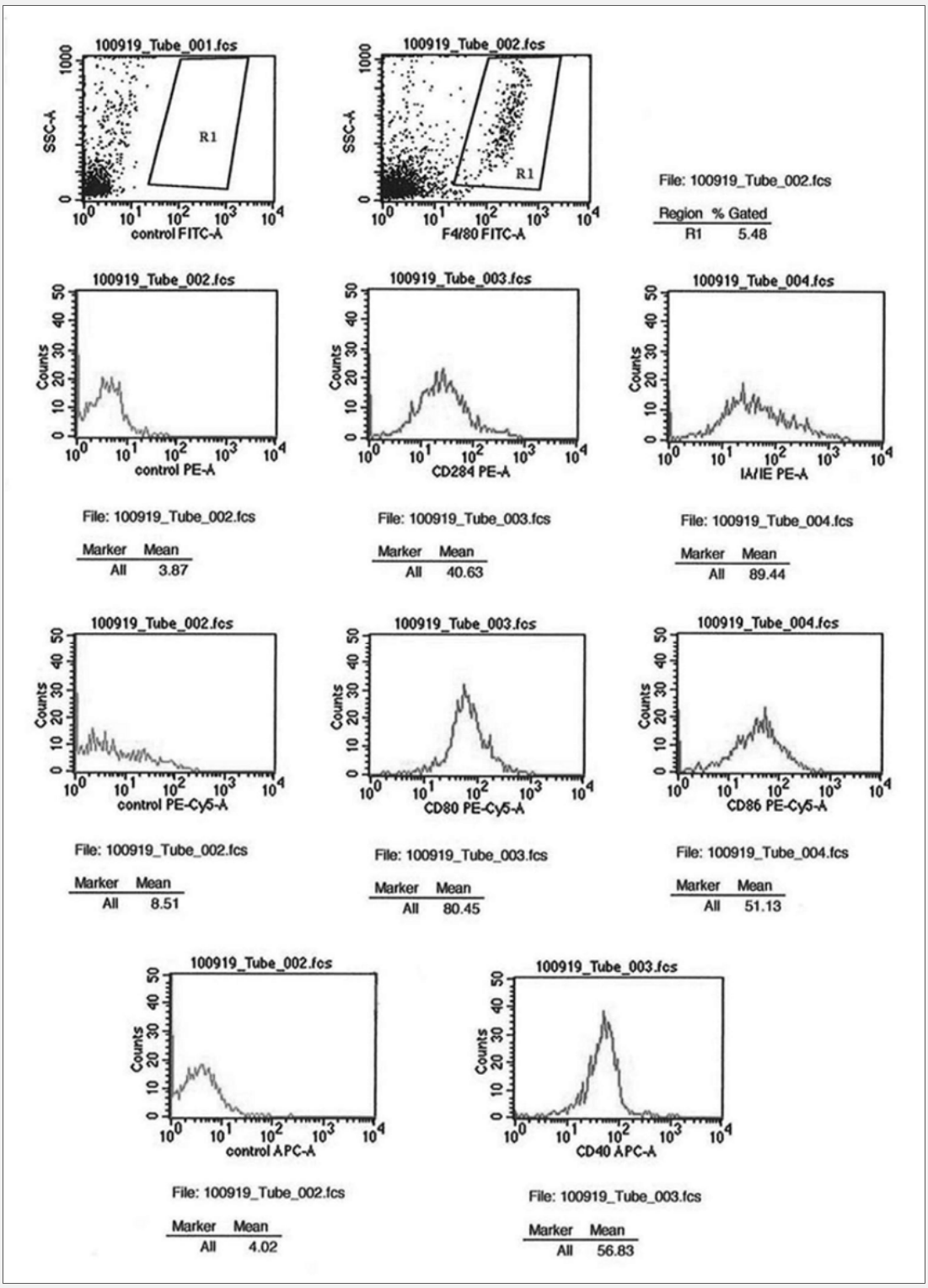

Figure 1. Surface markers of PMa from control BALB/c mice.

CD284 stands for TLR4, and IA/IE stands for MHC-II.

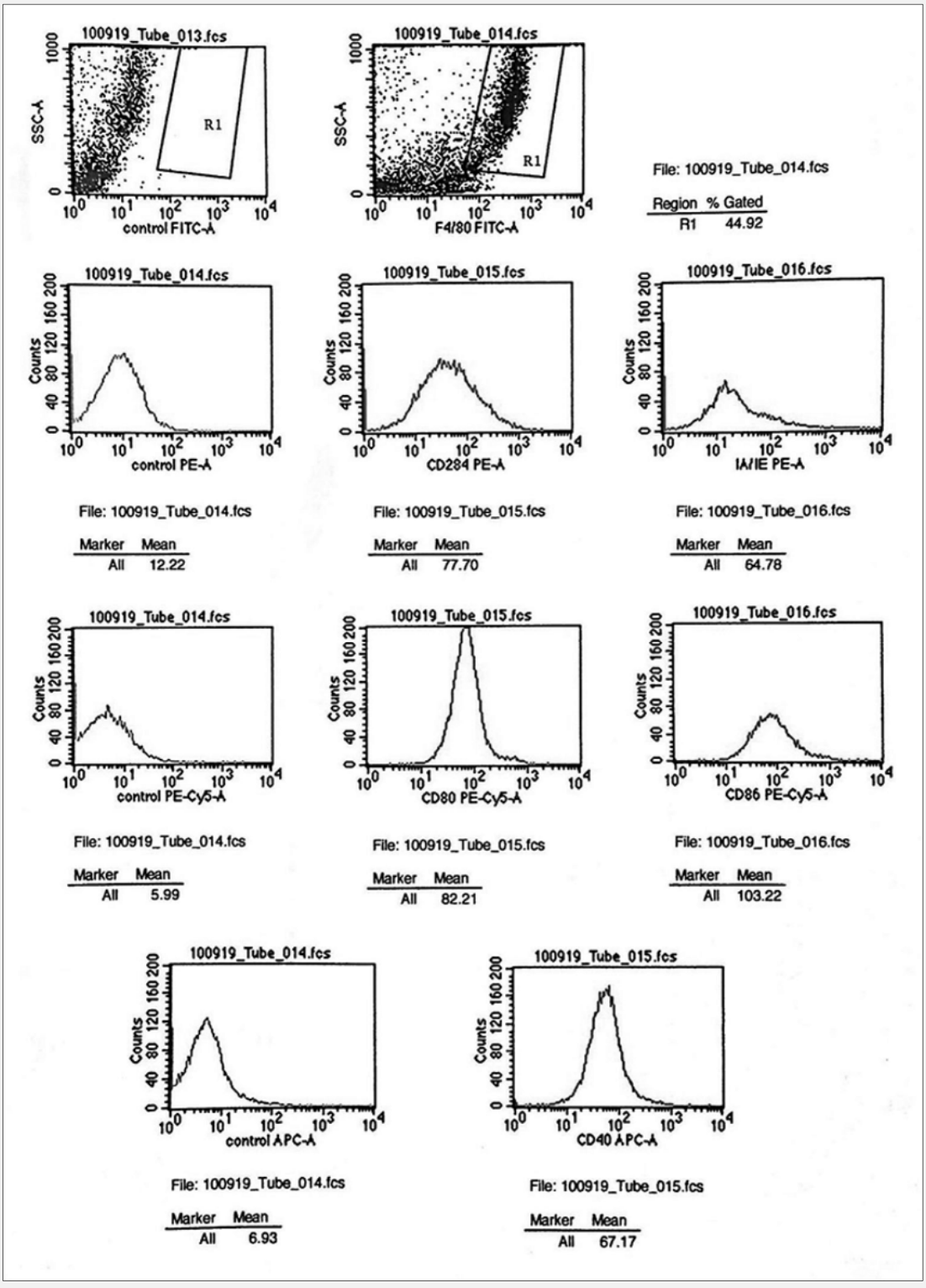

Figure 2. Surface markers of PMa from control SCID mice.

CD284 stands for TLR4, and IA/IE stands for MHC-II.

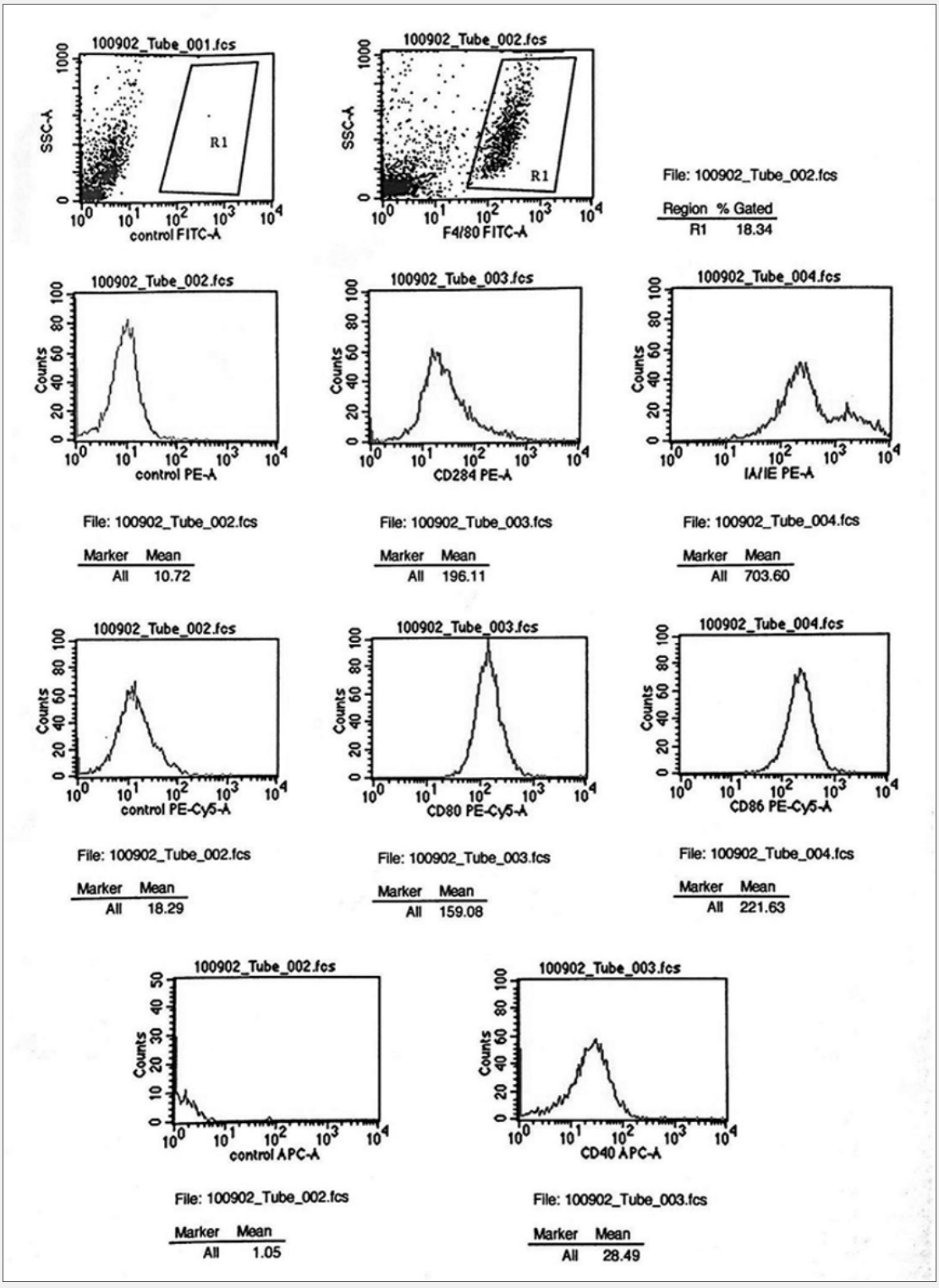

Figure 3. Surface markers of PMa from injected BALB/c mice.

CD284 stands for TLR4, and IA/IE stands for MHC-II.

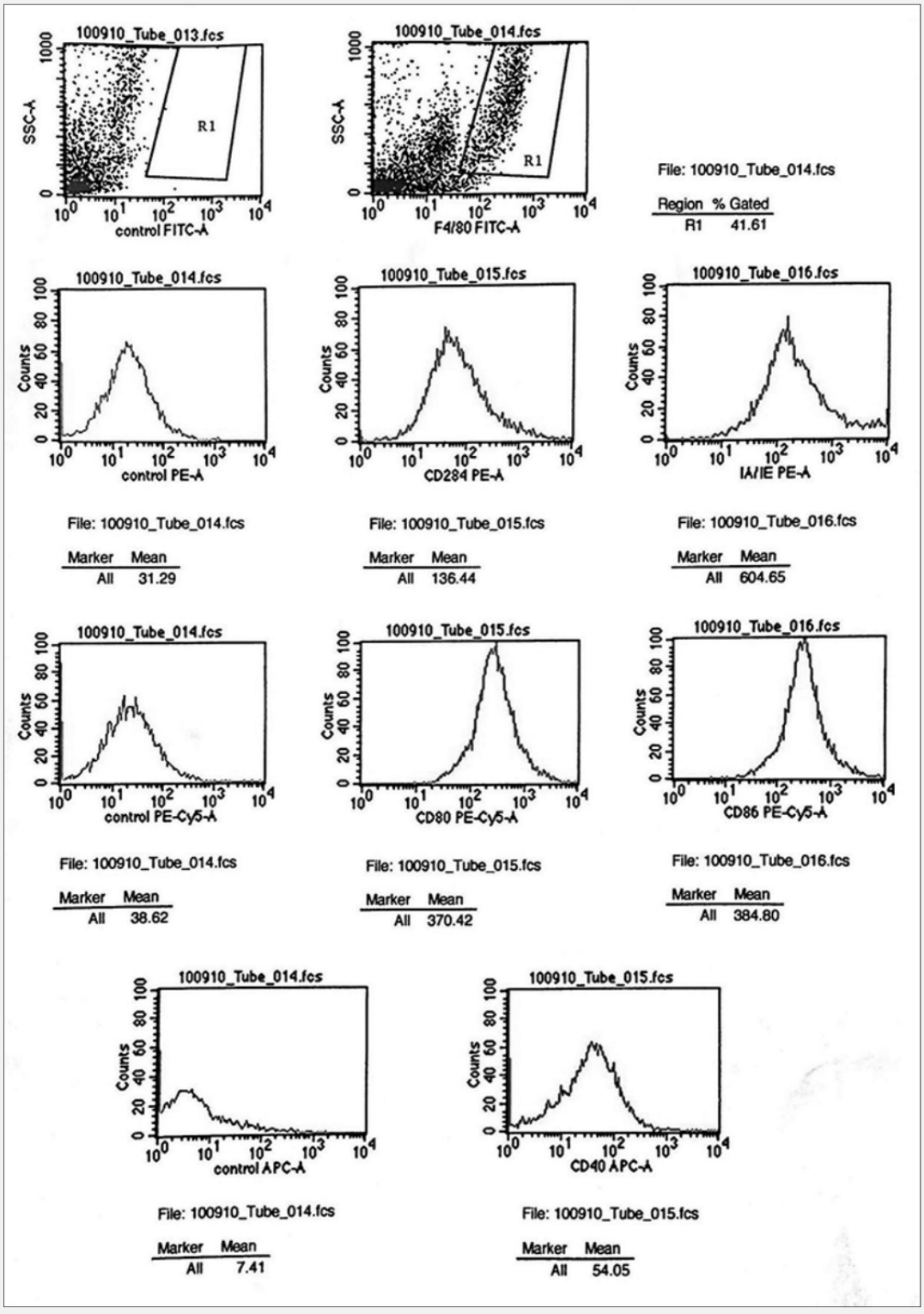

Figure 4. Surface markers of PMa from injected SCID mice.

CD284 stands for TLR4, and IA/IE stands for MHC-II.