Thrombocytopenia was evaluated in T-cell-deficient nu/nu mice and in T-cell-replete nu/+ controls to determine if abnormalities would be associated with the deficiency of T cells. Mice were studied in the unperturbed steady state and after acute immunothrombocytopenia was induced by an injection of guinea pig antimouse platelet serum (APS). The state of thrombocytopenia was determined from platelet counts, megakaryocyte size, megakaryocyte number, and numbers of Meg-CFC. Splenic lymphocytes were evaluated by responses to the mitogens bacterial lipopolysaccharides (LPS), phytohemagglutinin (PHA), and concanavalin A (Con A). Hematocrits, reticulocyte counts, leukocyte counts, marrowcellularity, GM-CFC, and BFU-E also were measured. Steady state thrombocytopenia was identical in nu/nu and nu/+ mice. In response to an injection of APS, acute thrombocytopenia was followed by macromegakaryocytosis and rebound thrombocytosis in mice of both genotypes. Splenic Meg-CFC increased in nude mice after APS or an injection of normal guinea pig serum (NGpS), and splenic GM-CFC increased after APS. Neither Meg-CFC nor GM-CFC increased in the spleens of nu/+ mice, but they showed early transient increases in bone marrow that did not occur in nu/nu mice. Sporadic, but weak, mitogenic responses to PHA or Con A were occasionally observed with nu/nu spleen cells, but these did not correlate with the state of thrombocytopenia. The results demonstrated that platelet production was normal in nu/nu mice and that megakaryocytosis and platelet production responded to the stimulus imposed by acute immunothrombocytopenia. Increases in megakaryocyte size and platelet production occurred independently of changes in numbers of Meg-CFC, GM-CFC, or BFU-E. A normal complement of T cells appears to be unnecessary for normal platelet production and its augmentation in response to the stimulus of acute immunothrombocytopenia in vivo. This is a US Government work. There are no restrictions on its use.

THE rate of platelet production is appropriately adjusted in response to experimental perturbations of the platelet count. Therefore, it can be concluded that thrombocytopoiesis is regulated. Several levels of platelet precursors have been shown to respond to the stimulation of thrombocytopoiesis that is produced in experimental animals by injection of heterologous antiplatelet serum (APS) to induce thrombocytopenia. Alterations of recognizable megakaryocytes and their immediate precursor cells tend to occur promptly after induction of thrombocytopenia, but responses of less differentiated cells, such as megakaryocyte colony-forming cells (Meg-CFC), are generally relatively delayed. The observations are consistent with multiple levels of megakaryocytic regulation in which more mature cells respond to a platelet-dependent regulatory mechanism, i.e., thrombopoietin, and less mature cells respond to other, as yet unidentified, mechanisms. However, cellular interactions that may be responsible for control of thrombopoietin production or mediation of other thrombocytopoietic regulatory functions have not been identified.

Dual regulation also has been proposed for growth of Meg-CFC in vitro. Both a colony-stimulating factor that promotes cell proliferation and a potentiator for maturation have been reported to be necessary. However, growth of megakaryocyte colonies, as well as cells that form colonies of other types of hematopoietic cells, can also be induced by the conditioned medium that is produced by spleen cells when they are exposed to a T cell mitogen, and this medium appears to contain all growth factors necessary for proliferation and maturation of megakaryocytes in vitro. Because of the potent effect of T cell products on Meg-CFC in vitro and the occasionally associated occurrence of platelet and immunological abnormalities in vivo, it has been proposed that T cells may play a thrombocytopoietic regulatory role in vivo. The possibility also has been suggested that immunothrombocytopenia, induced by APS, might result in changes in Meg-CFC that were more dependent on immunologica] stimulation of T cells than on the thrombocytopoiesis per se.

The present experiments were based on the concept that if T cells are important for the regulation of platelet production or for some aspects of the responses to APS, abnormalities of thrombocytopoiesis or its response to immunothrombocytopenia might be found in T cell–deficient nu/nu mice. Athymic mice have been reported to have normal platelet and megakaryocyte counts, but their ability to increase platelet production in response to stimulation has not been reported.

MATERIALS AND METHODS

Mice. Athymic nude (nu/nu) mice were studied, and heterozygous hirsute nu/+ mice were used as controls. Mice were obtained from Charles River Breeding Laboratories (Wilmington, Mass) and from NCI-Frederick Cancer Research Facility (Frederick, Md). Nu/nu mice were housed 5/cage, in a protective environment (Airo Clean Engineering Inc., Broomall, Pa); nu/+ mice were kept in a
standard mouse room. At the time of study, the mice were about 12 weeks old; each mouse was anesthetized with ether, a sample of cardiac blood was drawn, and the mouse was killed by cervical dislocation.

**Blood and bone marrow cell counts.** The cardiac blood samples were anticoagulated with dry K$_2$EDTA. Platelet counts were done by phase microscopy. Microhemocytorsis were determined with a Drummond centriuge (Drummond Scientific, Broomall, Pa.). Red blood cells were counted by microscopy after staining with new methylene blue. Leukocytes were counted with a Coulter counter (Coulter Electronics Inc., Hialeah, Fla) at a 1:500 dilution in Isoton and Zapoglobin (Coulter).

Bone marrow was flushed from each tibia with 1 mL of 1% Na$_2$EDTA in saline. Total cells were counted at Coulter counter at a 1:500 dilution in Isoton and Zapoglobin. Megakaryocytes were counted by microscopy with a hemacytometer, after addition of 0.1 volume of new methylene blue; duplicate counts were done on each tibia, and the average number for both tibiae was calculated.

**Megakaryocyte size.** Smears of bone marrow were made from split femurs with a 0.001 paint brush and then stained with Wright's and Giemsa stains. Stage III megakaryocytes were identified by microscopy based on the morphological characteristics of azurophilic granules throughout the cytoplasm and low nucleus:cytoplasm ratio. Areas of stage III cells that had intact cytoplasmic borders were measured microscopically with a Zeiss MOP-3 digital image analysis system (Carl Zeiss, Oberchemen, W. Germany). Sizes were recorded as "units"; each unit was equal to 1 mm$^2$ of the measuring tablet. A stage micrometer with divisions equal to 10μ was used to determine that the linear magnification was 1230 x. Based on a circular shape for the cells (a reasonable approximation for most megakaryocytes) 1000 "units" corresponded to an area of 660 μ$^2$ in the bone marrow smear. Areas of 50 megakaryocytes were measured for each mouse, and the average area was calculated. This average was then used to calculate average areas for each treatment group; that is, each mouse was represented in the final calculations by one number, not 50 numbers.

**Guinea pig sera.** Blood was collected, by cardiac puncture, from untreated guinea pigs under ether anesthesia. After it clotted, normal guinea pig serum (NGPS) was prepared by centrifugation and stored at −20 °C. It was diluted 1:4 with saline, and 0.1 mL was injected intraperitoneally into each mouse treated with NGPS.

Guinea pig antimouse platelet serum (APS) was prepared by injection of guinea pig with mouse platelets (−3 × 10$^6$ platelets/injection) suspended in complete Freund's adjuvant (Difco Laboratories, Detroit, Mich) and saline. The first injection was given into the foot pads and subcutaneously; 3 subsequent injections were given subcutaneously at 1, 2, and 4 weeks after the first. Immune serum was collected from cardiac blood 1 week after the final injection, and stored at −20 °C. Prior to use, it was heated to 56 °C for 30 minutes, absorbed 3 times with equal volumes of washed mouse red cells, and then again stored at −20 °C. It was diluted 1:4 with saline, and 0.1 mL was injected intraperitoneally into each mouse treated with APS.

**Megakaryocyte and granulocyte-macrophage colony-forming cells (Meg-CFC and GM-CFC).** Single-cell suspensions were prepared from bone marrow and spleen as previously described. AML Cultures were performed in 35 mm diameter plastic Petri dishes (Falcon Laboratories, Oxnard, Calif) using a 0.3% agar medium which contained Dulbecco's modified Eagle's medium and 20% horse serum (Flow Laboratories, Inc., McLean, Va), prepared according to a modification of the method of Metcalf et al.$^9$ To each culture dish, 0.1 mL of pokeweed mitogen-stimulated spleen-conditioned medium was added. Bone marrow cultures contained 25,000 or 50,000 cells/mL, and spleen cell cultures contained 0.5 × 10$^6$ or 1.0 × 10$^6$cells/mL.

After seven days of incubation at 37 °C in 100% humidity and 10% CO$_2$ in air, cultures were scored for colonies using an Olympus dissecting microscope (Olympus Corp., Lake Success, NY) with indirect lighting and ×35 to 40 magnification. Aggregates of 50 or more cells were scored as colonies except for megakaryocytes, for which 3 or more cells were considered a colony. Data presented in this article were based on triplicate cultures of cells pooled from 2 mice for each experimental point in each experiment. Granulocyte-macrophage (GM) colonies and megakaryocyte (Meg) colonies were enumerated, based on their morphological characteristics. The number of Meg colonies was confirmed by drying the agar cultures in situ with a hot plate and hair drier, followed by staining of the dried cultures for acetylcholinesterase, as described previously. AML Colonies were considered megakaryocytic if at least 3 cells demonstrated the characteristic orange-brown color, indicative of acetylcholinesterase, in the cytoplasm. The total numbers of Meg-CFC and GM-CFC per organ (femur or spleen) were calculated from their respective frequencies in cultures and the total nucleated cell count per femur or spleen.

**Erythroid burst-forming unit (BFU-E).** Human bone marrow suspensions were prepared in RPMI 1640 (Gibco Laboratories, Santa Clara, Calif) supplemented with 50 μg/mL gentamycin sulfate (Schering Corp, Kenilworth, N.J.). Marrow was flushed from the bone using a 22 gauge needle, and single-cell suspensions were prepared by gently passing the cells through a 27 gauge needle. Cells were counted using a hemacytometer, and viability was determined by eosin exclusion. BFU-E were cultured in methylcellulose using a modification of the method of Stewart et al.$^{11}$ The culture medium consisted of 0.8% methylcellulose (Dow Chemical, Walnut Creek, Calif), 1 mmol/L L-glutamine (Gibco), 10$^{-4}$ mol/L mercaptoethanol (Sigma Chemical Co., St. Louis, Mo), 28 μg/mL CaCl$_2$ (Sigma), 1% BSA (Fraction V, Miles Scientific, Naperville, Ill) which had been deionized and lyophilized according to the method of McLeod et al,$^{12}$ 30% fetal bovine serum (FBS; Flow), and alpha MEM (Gibco) containing 50 g/mL gentamycin sulfate (Schering). Human urinary erythropoietin (4.78 U/mg; kindly supplied by Dr. Gisela Clemens) was added at a final concentration of 2.5 U/mL. Bone marrow cells were plated at a concentration of 2 × 10$^5$ cells/mL. Cultures were incubated at 37 °C in 5% CO$_2$ in air with saturated humidity. Bursts were scored in unstained cultures after seven days using an inverted microscope at 40× magnification. Erythroid bursts were identified by the presence of hemoglobin which gave a pink-orange-red color to the cells and by their colony morphology and individual cell size. Colonies with multiple large aggregates that contained >50 cells (usually >100) were scored as BFU-E. Data are presented as mean number of BFU-E ± SEM for at least 6 cultures of pooled marrow from 3 mice/group.

**Mitogen assays.** Spleen cell suspensions were prepared in RPMI 1640 (Gibco) supplemented with 50 μg/mL gentamycin sulfate (Schering). Cell suspensions were made by teasing cells loose from the capsule with an 18 gauge needle. Single-cell suspensions were made by passing the cells several times through the tip of a Pasteur pipette followed by passage through a fine mesh nylon screen to remove the large clumps. The cells were counted using a hemacytometer, and viability was determined by eosin exclusion. Spleen cells were cultured in RPMI 1640 (Gibco) that contained 5% FBS (HyClone Laboratories, Logan Ut; a lot screened for low background response), 1 mmol/L sodium pyruvate (Gibco), 1% nonessential amino acids (Gibco), 50 μg/mL gentamycin sulfate (Schering), and 5 × 10$^{-5}$ mol/L mercaptoethanol (Sigma). Cells were cultured in quadruplicate in 96 well microtitre plates (Falcon) in a total volume of 0.2 mL/well containing 5 × 10$^4$ spleen cells and 2.5 μg/mL phytohemagglutinin (PHA, Difco), 2.5 μg/mL concanavalin A (Con A) (Miles), or 25 μg/mL lipopolysaccharide (LPS, Difco). Cultures were incubated at 37 °C in a humidified atmosphere.
of platelet counts was similar in both genotypes. Significant visible on the hairless nu/nu mice. The subsequent recovery or abnormal in nu/nu mice. The first was to compare to determine if regulation of thrombocytopoiesis was normal

NGpS. Day 6 platelet counts were significantly higher in platelet counts of 146% to 193% of controls injected with rebound thrombocytosis occurred on days 5 and 6 with four hours after APS. Extensive cutaneous petechiae were APS, NGpS, or saline. Severe thrombocytopenia was present equally to the B cell mitogen LPS.

nu/+, but not those from nu/nu, mice were stimulated to incorporate 3HTdR by incubation with the T cell mitogens PHA or Con A. Spleen cells from both genotypes responded

incorporate 3HTdR by incubation with the T cell mitogens PHA or Con A. Spleen cells from both genotypes responded equally to the B cell mitogen LPS.

Figure 1 shows data that confirm the T cell–deficient state of spleen cells from untreated nude mice. Spleen cells from nu/+, but not those from nu/nu, mice were stimulated to incorporate 3HTdR by incubation with the T cell mitogens PHA or Con A. Spleen cells from both genotypes responded equally to the B cell mitogen LPS.

Figure 2 shows blood platelet counts after an injection of APS, NGpS, or saline. Severe thrombocytopenia was present four hours after APS. Extensive cutaneous petechiae were visible on the hairless nu/nu mice. The subsequent recovery of platelet counts was similar in both genotypes. Significant rebound thrombocytosis occurred on days 5 and 6 with platelet counts of 146% to 193% of controls injected with NGpS. Day 6 platelet counts were significantly higher in

nu/nu than nu/+ mice injected with APS, but both genotypes showed thrombocytosis relative to controls injected with NGpS.

Average sizes of stage III megakaryocytes after an injection of APS, NGpS, or saline are presented in Fig 3. There was an abrupt increase in size on day 2 after APS to 141% to 161% of the size in controls injected with NGpS, after which sizes returned to normal.

Table 1. Hematologic Data of Untreated Mice

<table>
<thead>
<tr>
<th></th>
<th>nu/nu</th>
<th>nu/+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Platelets/mm³ (x 10⁶)</td>
<td>1.376 ± 0.050§</td>
<td>1.337 ± 0.038</td>
</tr>
<tr>
<td>Megakaryocytes/tibia (x 10³)</td>
<td>8.0 ± 0.7</td>
<td>8.7 ± 0.6</td>
</tr>
<tr>
<td>Megakaryocyte size (units)</td>
<td>1553.0 ± 49.1</td>
<td>1506.9 ± 41.8</td>
</tr>
<tr>
<td>Hematocrit (%)</td>
<td>45.4 ± 0.4</td>
<td>46.6 ± 0.3*</td>
</tr>
<tr>
<td>Reticulocytes (%)</td>
<td>1.6 ± 0.2</td>
<td>1.4 ± 0.1</td>
</tr>
<tr>
<td>Leukocytes/mm³</td>
<td>2059 ± 198</td>
<td>1800 ± 179</td>
</tr>
<tr>
<td>Cells/tibia (x 10⁴)</td>
<td>11.6 ± 0.3</td>
<td>13.5 ± 0.5†</td>
</tr>
</tbody>
</table>

*P < 0.025. Significance of difference between nu/nu and nu/+.

Unmarked, no difference.

†P < 0.005. Significance of difference between nu/nu and nu/+.

§Mean ± 1 SEM.
Hematocrits and leukocyte counts showed no differences between mice injected with APS and those injected with NGpS; reticulocyte counts were significantly higher (2.1 ± 0.2(SEM) v 1.1 ± 0.3%) on one occasion, day 4 in nu/+ mice. In the marrow, nu/+ mice had significantly more megakaryocytes after APS than NGpS on day 2 (13.4 ± 2.1 v 8.4 ± 0.8 × 10⁶/tibia), and slight hypercellularity was found on day 6 (nu/nu: 11.2 ± 0.6 v 9.3 ± 0.6 × 10⁶ cells/tibia; nu/+: 11.7 ± 0.8 v 9.1 ± 0.6 × 10⁶ cells/tibia).

Numbers of splenic Meg-CFC and GM-CFC are illustrated in Fig 4. Both types of colony-forming cells increased in the spleens of nu/nu mice after an injection of APS (Fig 4A and 4B), but only Meg-CFC increased after an injection of NGpS (Fig 4A). In contrast, neither type of colony-forming cell increased in the spleens of nu/+ mice after injection of APS or NGpS (Fig 4C and 4D). Figure 5 summarizes numbers of bone marrow Meg-CFC, GM-CFC, and BFU-E. None of these cell types increased in the marrow of nu/nu mice after injection of APS or NGpS (Fig 5A, 5B, and 5C). Control nu/+ mice showed an increase in Meg-CFC and GM-CFC four hours after APS (Fig 5D and 5E) and in Meg-CFC four hours after NGpS (Fig 5D); BFU-E did not increase (Fig 5F).

To explore the possibility that the injections of heterologous sera might have recruited latent T cell function in nu/nu mice, serial responsiveness of spleen cells to mitogens was determined after the injection of APS or NGpS. The results after APS are presented in Fig 6. As in the untreated mice shown in Fig 1, B cell function, ie, mitogenic response to LPS, was initially intact in nu/nu mice, but tended to diminish on days 5 and 6. Incorporation of [³H]TDR into nu/nu spleen cells after incubation with PHA or Con A did not exceed the baseline levels observed when cells were incubated in medium alone, except for a weak response to Con A on day 6. Responses to all mitogens were intact throughout the experiment in nu/+ spleen cells. The results after injection of NGpS are shown in Fig 7. Responses to LPS were intact in both genotypes throughout the experiment as were responses to PHA and Con A in nu/+ mice. Weak T cell responses were seen in nu/nu mice at six days to PHA and Con A at four hours to Con A.

**DISCUSSION**

In the present experiments, untreated T cell–deficient nu/nu mice were found to be identical to T cell–replete nu/+ controls with respect to platelet count, megakaryocyte number, and megakaryocyte size. Furthermore, both geno-
NGpS into the mice that spleen cells were collected and cultured. Assays were performed after incubation in medium alone (background) or in the presence of a mitogen. Each point represents the mean counts per minute (cpm) for quadruplicate cultures. Time on the abscissa refers to the time after injection of APS that have been found in other that react with antibodies to T cell antigens (reviewed in reference 31). It was suggested that T cells may play an important role in amplifying platelet production in response to inflammation or infection. However, the present results demonstrated that a full complement of T cells was not necessary either to maintain normal platelet production or to augment platelet production in response to acute immunothrombocytopenia. Furthermore, the increase of splenic Meg-CFC in nu/nu mice, following administration of NGpS (which did not alter platelet levels), demonstrated that these T cell–deficient mice were capable of responding to an immunological challenge, as has been previously described in C57B1 mice.

As determined by mitogen (PHA and Con A)–induced DNA synthesis, the untreated nu/nu mice used in these experiments had no demonstrable T cells in their spleens. However, others have reported that nu/nu mice are not completely lacking in T cells, but have low numbers of cells that react with antibodies to T cell antigens (reviewed in reference 31). Such cells do not prevent nude mice from accepting grafts of foreign tissue and do not provide the immunological support necessary for a normal life span. Likewise, spleen cells from nu/nu mice, of approximately the same age as those utilized in our experiments, do not appear capable of producing interleukin 2.22 However, it is possible that the small numbers of T cells that are demonstrable with antibodies represent a selected population of T cells that might have hematopoietic regulatory capability. If so, their identification and further study would be of great interest. Macrophages from nu/nu mice have been found to have greater bactericidal activity than those from normal mice.23 Therefore, it is noteworthy that macrophages have been identified as a potent source of potentiator activity that induces megakaryocyte differentiation in vitro.28 Thus, macrophages might have accounted for the normal stimulation of thrombopoiesis in nu/nu mice. However, it is also equally possible that neither T cells nor macrophages were involved and that regulation of platelet production is independent of these cell types.

It also has been reported that athymic, but not euthyemic, mice have splenic cells capable of suppressing the response of spleen cells to the B cell mitogen LPS.24 If such suppressor cells were activated by the platelet antigen–antibody reaction, the delayed tendency for spleen cell responsiveness to LPS to decline in nu/nu mice after APS but not after NGpS might be explained.

Levels of 3HTdR incorporation that were higher than background were detected on four occasions when nu/nu spleen cells were incubated with the T cell mitogens PHA or

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Fig 6. Serial observations of tritiated thymidine incorporation into 5 x 10⁶ spleen cells from nu/nu and nu/+ mice after injection of APS. Assays were performed after incubation in medium alone (background) or in the presence of a mitogen. Each point represents the mean counts per minute (cpm) for quadruplicate cultures. Time on the abscissa refers to the time after injection of APS into the mice that spleen cells were collected and cultured.

Fig 7. Serial observations of tritiated thymidine incorporation into 5 x 10⁶ spleen cells from nu/nu and nu/+ mice after injection of NGpS. Assays were performed after incubation in medium alone (background) or in the presence of a mitogen. Each point represents the mean counts per minute (cpm) for quadruplicate cultures. Time on the abscissa refers to the time after injection of NGpS into the mice that spleen cells were collected and cultured.
Con A. In all cases the level of incorporation (cpm/5 x 10^5 cells) was considerably less than that found in control spleen cells. However, T cell recruitment, as demonstrated by mitogen responsiveness, did not appear to account for the stimulation of thrombocytopoiesis that was observed in response to immunothrombocytopenia, because only six days after APS injection did nu/nu mice show a weak mitogenic response. By that time, platelet counts were at rebound thrombocytotic levels, and megakaryocyte number and size had returned to normal; that is, stimulation of megakaryocytopoiesis had already run its course.

Similarly, correlations between changes in numbers of colony-forming cells and the state of thrombocytopoiesis in these mice are not obvious. The nu/nu mice showed delayed increases in splenic Meg-CFC after APS or NGpS and in splenic GM-CFC after APS, but thrombocytopoiesis and stimulation of thrombocytopoiesis occurred only after APS. However, platelet counts on the sixth day after APS were significantly higher in nu/nu than in nu/+ mice. Therefore, it could be proposed that splenic hematopoiesis, as shown by elevated levels of Meg-CFC and GM-CFC in nu/nu but not nu/+ spleens, may have accounted for the difference in platelet levels. Neither Meg-CFC nor GM-CFC increased in the nu/nu bone marrow. The changes in splenic and bone marrow CFC in nu/nu mice resembled those previously described in C57B1 mice, but increases in the spleen were of lesser magnitude and duration. In contrast, nu/+ controls unexpectedly showed no delayed increase in Meg-CFC or GM-CFC in the spleen, but numbers of Meg-CFC were increased in the marrow four hours after APS or NGpS, and numbers of marrow GM-CFC were increased four hours after APS. Since there were no clear-cut differences in thrombocytopoiesis in the two genotypes during the first five days after administration of APS, the influence of these early increases in Meg-CFC and GM-CFC in the marrow on subsequent megakaryocytopoiesis is not clear. These data suggest that strain differences in CFC responses may exist, and they show that similar thrombocytopoietic alterations can accompany different Meg-CFC and GM-CFC responses to perturbation.

Changes in numbers of CFC could not be attributed directly to thrombocytopenia or to an indirect effect of thrombocytopenia on the marrow, because they also occurred in mice injected with NGpS, which did not produce thrombocytopenia. Similar responses to normal heterologous serum also have been observed in C57B1 mice, and it was postulated that stimulation of the reticuloendothelial system played a role in the response. In addition, increases in GM-CFC occurred in the marrow of nu/+ mice and the spleens of nu/nu mice only after APS, whereas increases in Meg-CFC followed administration of either APS or NGpS. Others have reported that the proportion of Meg-CFC in DNA synthesis increases in response to thrombocytopenia even if numbers of Meg-CFC do not increase. Thus, cell cycle status, which was not measured in our experiments, may be a more sensitive indicator of the involvement of Meg-CFC in thrombocytopoiesis than is their number.

The observations that hematocrits and bone marrow cellularity were lower than normal in nu/nu mice confirms reports of others. Marrow hypocellularity has been reported to be due mainly to low numbers of erythrocytic and lymphocytic cells.

In summary, our data indicated that T cell–deficient nu/nu mice regulated thrombocytopoiesis normally both in the unperturbed steady state and in response to acute immunothrombocytopenia. This suggests either that T cells were not required for the regulation of platelet production in vivo or that T cell thrombocytopoietic regulatory function resided in the small population of T cells that exists in nu/nu mice. Delayed and nonspecific responses of Meg-CFC suggested that quantitative changes in these cells were not essential for the response to acute immunothrombocytopenia.

REFERENCES

Thrombocytopoietic response to immunothrombocytopenia in nude mice

S Ebbe, J Levin, K Miller, T Yee, F Levin and E Phalen