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USE OF HUMAN BONE MARROW CELLS FOR IN VITRO TESTING OF ANTI-TUMOR AGENTS

By

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TABLE OF CONTENTS

| | |
|--|-----|
| Acknowledgment..... | III |
| Introduction..... | V |
| Survey of the Literature..... | 1 |
| 1. Cell Cycle..... | 1 |
| 2. Nucleic Acid Synthesis..... | 5 |
| 3. Inhibition of Nucleic Acid Synthesis..... | 14 |
| 4. Tritiated Thymidine as a Label..... | 16 |
| 5. Mycophenolic Acid..... | 19 |
| 6. Acronycine..... | 25 |
| 7. 8-Azaguanine, 5-iododeoxyuridine, and Alkylating Agents..... | 30 |
| Introduction to Experimental Work..... | 34 |
| Material and Methods..... | 35 |
| Results | 46 |
| Experiments with L5178Y Mouse Lymphoma Cells..... | 46 |
| Experiments with EB3 Burkitt's Lymphoma Cells..... | 52 |
| Experiments with Human Bone Marrow Cells..... | 57 |
| Autoradiography of Bone Marrow Cells..... | 65 |
| Discussion..... | 68 |
| Summary..... | 75 |
| Bibliography..... | 76 |
| Curriculum Vitae..... | 83 |

Summary

Nucleic acid synthesis of L5178Y mouse lymphoma cells, EB3 Burkitt's lymphoma cells, and human bone marrow cells were studied using tritiated thymidine ($^3\text{H-TdR}$) and tritiated uridine ($^3\text{H-UdR}$) as labels.

Mycophenolic acid inhibited the nucleic acid synthesis in L5178Y mouse lymphoma cells. The percent of inhibition of $^3\text{H-TdR}$ incorporation was 89% to 96% and that of $^3\text{H-UdR}$ was 79% to 90%.

In Burkitt's lymphoma cells mycophenolic acid inhibited $^3\text{H-TdR}$ incorporation 85% while the metabolite mycophenolic acid glucuronide had no effect on $^3\text{H-TdR}$ incorporation.

In human bone marrow cells mycophenolic acid inhibited $^3\text{H-TdR}$ incorporation (76.9%) and the inhibition was reversed by guanosine. The metabolite mycophenolic acid glucuronide had no effect on $^3\text{H-TdR}$ incorporation.

Acronycine inhibited $^3\text{H-TdR}$ incorporation on human bone marrow cells (82%). The metabolite 9-OH-acronycine had no effect on $^3\text{H-TdR}$ incorporation.

Autoradiographic studies were done to evaluate the effect of acronycine on human bone marrow cells. It was shown that the percentage of cells that were labeled was lower when cells were exposed to acronycine.

A method is developed for using human bone marrow cells as a source of proliferating mammalian cells for in vitro testing of anti-tumor agents.