

CELL CYCLE

In continuously dividing cell, an individual cell passes through four phases.

G₁ is a resting phase, during S phase, DNA synthesis takes place and G₂ phase is again a resting phase following DNA synthesis. These three phases viz G₁, S and G₂ constitute interphase, while the main mitotic division takes place during M phase. Durations of different phases vary not only in different materials, but also in different tissues of the same organism. These may also vary in cells in culture using different culture media. The durations of different phases in three materials are given. The mitotic phase consists of the following stages:

1. Prophase
2. Metaphase
3. Anaphase
4. Telophase
5. cytokinesis

Different phases of mitotic cell cycle

parts of cell cycle	Phases	Description of Phases	Duration in hours		
Inter phase	G ₁	Pre DNA Synthesis phase	12	12	12
	S	DNA Synthesis phase	06	6-8	10
	G ₂	Post DNA-Synthesis phase	12	1-6	03
Mitosis	M	Mitotic phase	01	01	01

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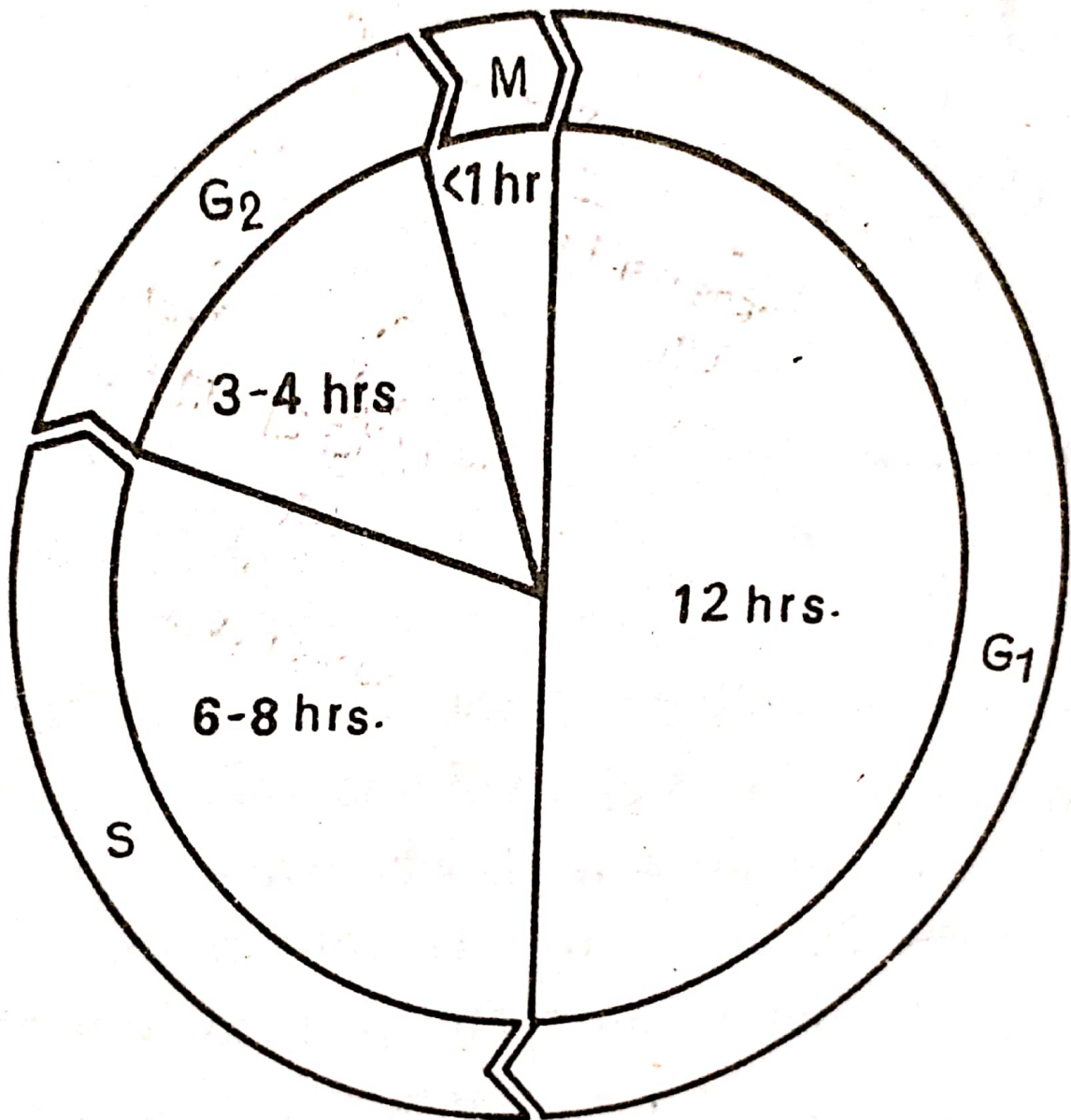


Fig. 17.1. Diagrammatic representation of cell cycle of mouse L cells doubling every 24 hours (redrawn from Lewin's *Gene Expression-2*).