

| | |
|-------------------------|--|
| 1. Record Nr. | UNINA9910807306403321 |
| Autore | Furger Christophe |
| Titolo | Live cell assays : from research to health and regulatory applications / / Christophe Furger |
| Pubbl/distr/stampa | Hoboken, New Jersey : , : ISTE Ltd/John Wiley and Sons Inc, , 2016 |
| ISBN | 1-119-33016-5 1-119-33017-3 1-119-33014-9 |
| Descrizione fisica | 1 online resource (285 p.) |
| Collana | Biomedical engineering series |
| Disciplina | 571.6 |
| Soggetti | Cells Biological assay |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di contenuto | Cover; Title Page; Copyright; Contents; Foreword; A researcher's view; A consultant's view; The author; Acknowledgments; Abbreviations; List of Cell Assays; Introduction; 1: Principles and Position; 1.1. Live cell assay principles; 1.2. Application areas; 1.3. Positioning; 1.3.1. Definition and typology of cell tests; 1.3.2. The regulatory and industrial dimension; 1.4. Market; 1.5. Competitive advantages; 1.5.1. Cells are live information models; 1.5.2. Development: high throughput; 1.5.3. Development: multiplex analysis; 1.5.4. Development: miniaturization 1.5.5. Development: molecular engineering1.5.6. Development: standardization; 1.6. Can measurements of cells in culture be extrapolated to effects in the organism?; 1.6.1. Toxicokinetics; 1.6.2. Components of the immune system; 1.6.3. Biotransformation; 1.6.4. The macrocellular environment; 1.7. Limits; 1.7.1. Importance of cellular microenvironment; 1.7.2. Other limits; 2: History and State of the Art; 2.1. Origins of cell culture; 2.1.1. Pioneering studies; 2.1.2. Alexis Carrel; 2.1.3. Were Dr Carrel's cells immortal?; 2.2. The HeLa line and the first applications of cell culture 2.2.1. A vaccine against poliomyelitis2.2.2. Cells in space; 2.2.3. Cell cloning; 2.3. New cell lines; 2.3.1. The CHO line; 2.3.2. An increasing number of cell lines; 2.4. Cross-contamination; 2.5. Cell lines, an ethical issue; 2.6. The first generation of cell assays (1969-1983); |

2.6.1. The karyotype test; 2.6.2. The MTT assay; 2.6.3. The NRU test;
2.7. The first target of regulatory assays: genotoxicity (1983-1986);
2.7.1. Ames test (OECD guideline 471); 2.7.2. In vitro mammalian
chromosome aberration test (OECD guideline 473)
2.7.3. In vitro mammalian cell gene mutation test (OECD guideline 476)
2.7.4. In vitro sister chromatid exchange assay in mammalian cells
(OECD guideline no. 479); 2.7.5. DNA damage and repair, unscheduled
DNA synthesis in mammalian cells (OECD guideline 482); 3: Cell Models
and Technologies; 3.1. Fluorescence and bioluminescence; 3.1.1. Green
fluorescent protein; 3.1.2. BRET; 3.1.3. FRET; 3.1.4. Other applications
of GFP; 3.1.5. The reporter gene approach; 3.2. Impedance variation in
cell population; 3.3. Optical signals modified by state of cells; 3.4.
Cellular autofluorescence
3.4.1. The case of chlorophyll3.5. The different cell models and culture
modes available; 3.5.1. Immortalized lines; 3.5.2. Primary cells; 3.5.3.
Three-dimensional cell culture; 4: Loss of Cell Homeostasis:
Applications in Toxicity Measurement; 4.1. What relevant information
to use in the living cell?; 4.2. Lysosomal activity; 4.3. Redox balance
and oxidative stress; 4.4. Integrity of the plasma membrane; 4.5.
Cellular efflux; 4.6. Homeostasis of ion exchanges; 4.6.1. The calcium
ion; 4.6.2. Maintenance of membrane potential; 4.7. Metabolism and
cell respiratory activity; 4.8. Genotoxicity
4.9. Apoptosis
