

## IN CYTOTOX

# NR NEUTRAL RED

## APPLICATIONS

Colorimetric assay for the quantification of the membrane permeability and lysosomal activity of cells in response to pharmaceutical, chemical and environmental compounds, and nutrients.

## PRINCIPLE

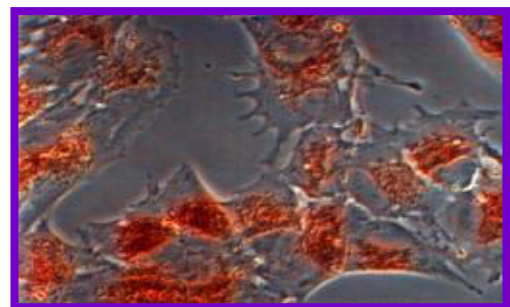
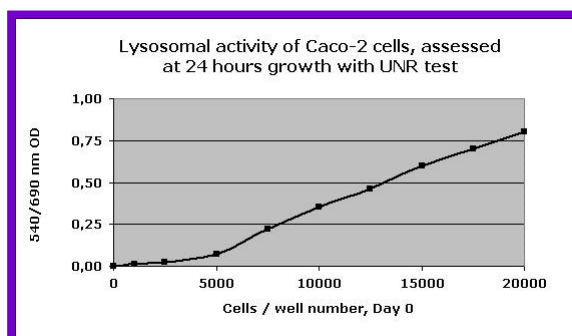
The neutral red (NR) assay procedure is a cell survival/viability assay based on the ability of viable cells to incorporate and bind neutral red within lysosomes. It is generally performed on adherent cells. NR is a weak cationic dye that readily penetrates the cell membrane and accumulates intracellularly in lysosomes (lysosomal pH < cytoplasmic pH), where it binds with anionic sites to the lysosomal matrix (G. Griffon, et al. 1995). Changes of the cell surface or the sensitive lysosomal membrane lead to lysosomal fragility and other changes that gradually become irreversible. Such alterations brought about by the action of xenobiotics result in a decreased uptake and binding of NR. It is thus possible to distinguish between viable, damaged, or dead cells, which is the basis of the assay.

The quantity of dye incorporated into cells is measured by spectrometry at 540 nm, and is directly proportional to the number of cells with an intact membrane.

The assay can be used to evaluate cytotoxicity by determination of the IC<sub>50</sub> (50% inhibiting concentration).

## BIOLOGICAL PARAMETERS EVALUATION

- IC<sub>50</sub> (Inhibitory Concentration 50%)
- Membrane permeability
- Lysosomal activity



# TECHNICAL SPECIFICATIONS

- Absorbance:** - 540 nm + 690 nm (reference)
- Approximate assay time:** - 3 hrs 40 min
- Available kit configurations:**
- Reagents only
  - Reagents and 96-well microplates, sterile reagent reservoirs
- NR Kit content:**
- Wash solution NR I
  - Labeling solution NR II
  - Fixing solution NR III
  - Solubilization solution NR IV
  - Instruction manual

## NR KIT SIZES AND REFERENCE NUMBERS

REFERENCE NO.	NUMBER OF TESTS
KRN96.1200	1200
KRN96.2400	2400

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