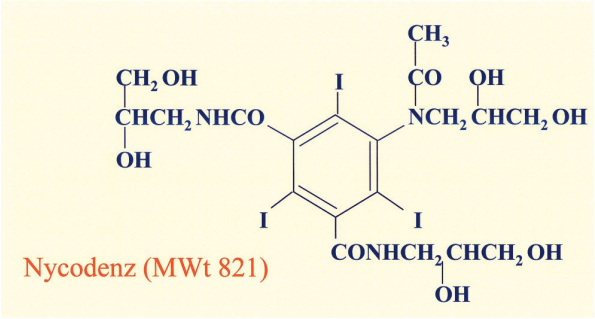
Nycodenz®
A universal density gradient medium

Nycodenz® is an off-white powder, freely soluble in water. Solution up to 80% (w/v) with a density of 1.426 g/ml can be prepared.



Nycodenz® were originally developed as an X-ray contrast medium and have therefore been subject-ed to rigorous clinical testing.

Nycodenz® is non-ionic, non-toxic to cells and metabolically inert.

Nycodenz® can be used for the isolation of cells, subcellular organelles and membranes, macromole-cules and viruses.

Nycodenz® forms true solutions. It is therefore easy to remove the medium from the cells after fractionation.

Nycodenz® is resistant to bacterial degradation.

Nycodenz® solutions can be autoclaved.

Nycodenz® is the trademark name for iohexol, whose systematic name is 5-(*N*-2,3-dihydroxypropylacetamido)-2,4,6-tri-iodo-*N*-*N*'-bis(2,3-dihydroxypropyl)isophthalamide. It has a molecular weight of 821. The chemical properties and stability of Nycodenz® are related to its struc-ture. Its high density derives from the presence of a substituted triiodobenzene ring linked to a number of hydrophilic groups which are responsible for the high water solubility of Nycodenz®. It is a non-ionic derivative of metrizoic acid; the carboxyl group present in metrizoic acid is linked to the amine group of 3-amino-1,2-propanediol. The dihy-droxypropylacetamido side chain is responsible for the very low toxicity of Nycodenz® compared to metrizamide. Nycodenz® has a defined melting point between 174 and 180^{0}C. The iodinated aro-matic nucleus absorbs strongly in the ultraviolet re-gion of the spectrum with an absorbtion maximum of 244 nm

Gradients of Nycodenz® can be generated by:

- Centrifugation **in situ** (self-forming gradients).
- Diffusion. Using Nycodenz®, linear gradients can be simply prepared within 45 minutes.
- Freezing and thawing.
- Tilted tube rotation (Gradient Master™).

The density of Nycodenz® in solution can be determined by measuring the refractive index. The density can also be determined spectrophotometrically.

Nycodenz® is a non-particulate medium therefore the distribution of cells in gradients can be determined using a haemocytometer, electronic particle counter or by light scattering measurements using a spectrophotometer.

Nycodenz® does not interfere with the orcinol and diphenylamine reactions for the estimation of nucleic acids nor with the very sensitive dye binding assays for protein and DNA.

Polysaccharides and sugars can be determined in the presence of Nycodenz® using the phenol/H_2SO_4 assay. Fluorimetric assays of nucleic acids and proteins can also be carried out in the presence of Nycodenz®. Nycodenz® does not interfere with most assays for the marker enzymes of subcellular components, also commercial scintillants are compatible with Nycodenz®.

Nycodenz® can be removed from samples by dialysis, ultrafiltration or gel filtration. Cells, subcellular organelles and other particulate matter can be isolated from Nycodenz® by centrifugation without the risk of contaminating the pellet with Nycodenz®.

Nycodenz® is supplied as a powder in the following package size:

Prod. No. 1002424 1x500g

Applications:

- **Mammalian and non-mammalian cells**
- **Subcellular organelles**
- **Organelles from non-mammalian sources**
- **Subcellular membranes**
- **Protein and protein complexes**
- **Ribonucleoproteins**
- **Viruses**

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