Neuroblastoma is the most frequent pediatric extracranial solid tumor. Patient’s outcome is strongly influenced by heterogeneity and complex tumor biology.\(^2\) Chemotherapy emerges as the last opportunity for children with poor prognosis but can be extremely toxic. Etoposide is a podophyllotoxin derivative given to neuroblastoma patients that often presents acute and late toxicity.\(^3\) Nanotechnology has been widely studied in cancer treatment with the aim of improving the therapeutic index of chemotherapeutic drugs.\(^4\) Lipid nanosystems in particular are known to have low toxicity and avoid the use of organic solvents.\(^5\)

## METHODS

### 1. Development of etoposide-lipid nanomedicines (ETP-NP)

Hot homogenization method & ultrasonication

![Image](image-url)

Light phase: Tween 80 Aqueous phase: Tumor solution at 37°C

- In vitro
- µg/ml
- Precirol®
- UV
- aqueous

**III. Cell viability studies (MTS)**

- MTT assay at 72h

**UV-VIS**

- Drug content

**UHPLC-UV**

- Physicochemical characterization

**RESULTS**

**Table 2.** Physicochemical characterization of the developed nanomedicines (data ± 0.2, data mean ± SD) and quantification of etoposide within lipid nanomedicines by UV-vis method and UHPLC-UV method (data ± 0.2, data mean ± SD)

<table>
<thead>
<tr>
<th>DRUG CONTENT</th>
<th>PHYSICO-CHEMICAL CHARACTERIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV-Vis</td>
<td>UHPLC-UV</td>
</tr>
<tr>
<td>ETP SOLUTION</td>
<td>SK-N-BE(2)</td>
</tr>
<tr>
<td>Drug loading</td>
<td>EE</td>
</tr>
<tr>
<td>4.58 ± 0.60 µg/mg</td>
<td>80.23 ± 4.58 %</td>
</tr>
</tbody>
</table>

**Figure 2.** Cell viability assays. Cells were expanded to etoposide (ETP) and etoposide-loaded nanomedicines (ETP-NP) treatments for 72 hours.