Propranolol was the first beta-blocker, developed in the 1960s by James Black, who received the Nobel Prize for his discovery. Propranolol is mainly used to treat hypertension, angina diseases and anxiety.

Typical dosages for tablets range from 10 to 80 mg. The following formulation is for a 40 mg tablet.

### Formulation

<table>
<thead>
<tr>
<th>Active content [mg]</th>
<th>mg/tablet</th>
<th>Contribution [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propranolol HCl</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td><strong>PROSOLV® EASYtab SP</strong></td>
<td>160.0</td>
<td>80.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>200.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Procedure

**Blending:**
The API was blended with **PROSOLV® EASYtab SP** for 15 minutes. The powder mixture was ready for direct compression.

**Equipment:**
- Tablet Press: Kilian Pressima, 8 mm punch
- Hardness Tester: Schleuniger Tablet Tester 6D
- Dissolution Tester: Pharmatest PTW 2
- Spectrophotometer: Cecil CE 1021

**Tablet Characteristics**
- Compaction force: 7 kN
- Tablet diameter: 8 mm
- Tablet weight: 200 mg
- Crushing strength: 110 N
- Friability: 0.0 %
- Disintegration time: 25 s
### Propranolol Direct Compression

#### Dissolution Test:
- **Dissolution Medium:** 900 mL 0.1 N HCl, 37°C, n=6
- **Samples:** taken after 5, 10, 15, 30, 60, 80, 150 and 180 minutes. The sample volume was 3 mL.
- **Determination:** of Propranolol was done by UV spectroscopy at λ = 230 nm.

![Diagram 1](image)

**Diagram 1:**
Typical dissolution profile of a Propranol tablet, produced according to the above formulation.

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**Disclaimer:** The information provided is based on thorough research and is believed to be completely reliable. Application suggestions are given to assist our customers, but are for guidance only. Circumstances in which our material is used vary and are beyond our control. Therefore, we cannot assume any responsibility for risks or liabilities, which may result from the use of this technical advice.