



Excipient Synergies for Extended Release

Enhance your extended release products **without adding complexity**

Carbopol® polymers are reliable, proven tools for extended- and controlled-release tablet formulations.

By combining traditional matrix formers (such as HPMC) with Carbopol polymers, you can achieve key features and benefits in your formulation:

- **Smaller, easier-to-swallow** tablets with lower overall excipient level
- **Tunable release kinetics**, even for high dose actives
- **Robust tablet formulations** with minimal batch-to-batch variability
- **Broad API compatibility**, including hydrophilic compounds
- **Flexible manufacturing** (direct compression, extragranular addition*)
- Opportunities for **IP and 505(b)(2) product development**

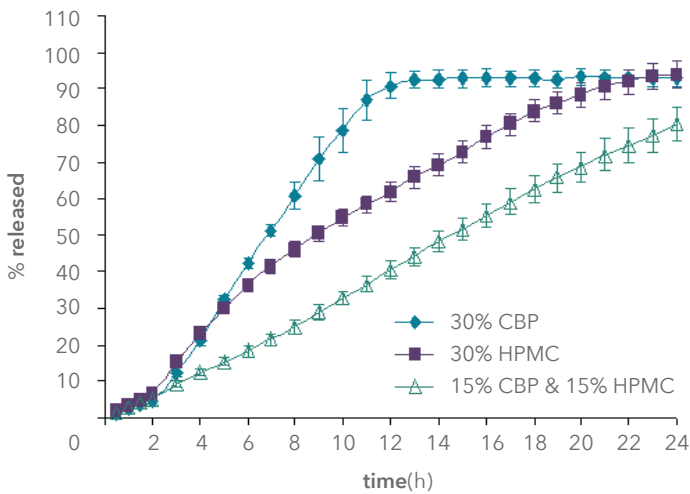
* achieve with as little as 3-5% of powder-grade Carbopol polymer



Carbopol Polymers Exhibit Synergy with Hypromellose (HPMC)

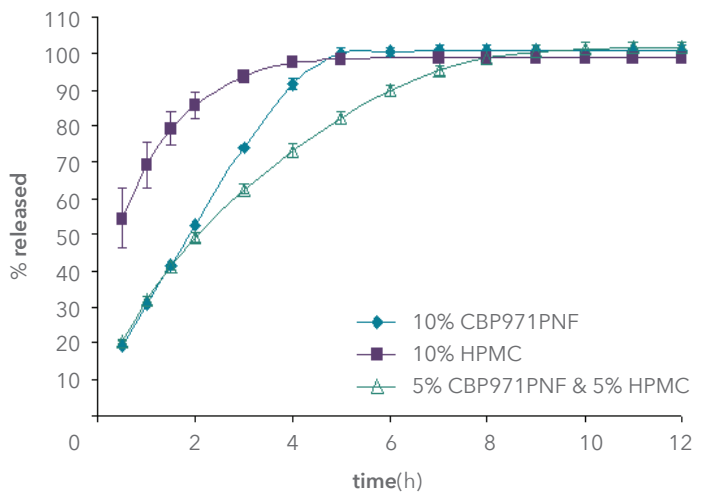
Example 1: Ketoprofen release

Carbopol® 71G NF polymer
50 mg strength
Manufactured via direct compression
USP method for modified release



Example 2: Guafenesin release

Carbopol® 971P NF polymer
100 mg strength
Manufactured via wet granulation
Dissolution in pH=6.8 buffer



Carbopol polymers combined with hypromellose result in stronger extended release matrices with better control over release



Start your project today

Visit: go.lubrizol.com/oral to learn more.

