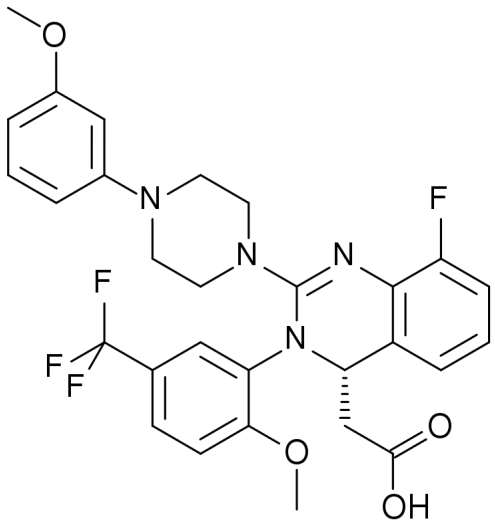
**Brand Name:** Prevymis
**Generic:** letermovir
**Type:** small molecule
**Year Accepted/Phase:** 2015

## Mechanism:

Letermovir is a CMV DNA terminase complex inhibitor. It targets the CMV DNA terminase complex (comprised of pUL51, pUL56, and pUL89), which is essential for viral DNA processing and packaging. By inhibiting this complex, letermovir prevents the maturation of viral DNA and the production of infectious CMV particles, thereby preventing the replication and spread of the virus.

## Chemical Structure:




## Indication:

Prevymis (letermovir) is indicated for the prophylaxis of cytomegalovirus (CMV) infection and disease in adult CMV-seropositive recipients of an allogeneic hematopoietic stem cell transplant (HSCT).

## Clinical trials:

**P001 (Phase III)**
**Pubmed:** https://pubmed.ncbi.nlm.nih.gov/29211658/
**Purpose:** Evaluate the efficacy and safety of letermovir for the prevention of CMV infection in CMV-seropositive adult allogeneic HSCT recipients.
**Dates:** Conducted from 2013 to 2016.
**Results:** The trial demonstrated that at week 24 post-transplant, 37.5% of patients in the letermovir group developed clinically significant CMV infection compared to 60.6% in the placebo group. This result showed a significant reduction in the incidence of CMV infection in patients receiving letermovir. Letermovir was well-tolerated, with the most common side effects being nausea, diarrhea, and vomiting.
**Impact:** The results of this trial led to the approval of letermovir for CMV prophylaxis in adult CMV-seropositive recipients of allogeneic HSCT. The trial showed that letermovir is effective in significantly reducing the incidence of CMV infection and is generally well-tolerated.

**P002 (Phase II)**
**Pubmed:** https://pubmed.ncbi.nlm.nih.gov/37279999/
**Purpose:** Assess the safety, tolerability, and efficacy of letermovir for the prevention of CMV infection in CMV-seropositive adult allogeneic HSCT recipients.
**Dates:** Conducted from 2010 to 2012.
**Results:** The study demonstrated a dose-dependent reduction in CMV infection rates, with the highest dose of letermovir (240 mg and 480 mg) showing the most significant reduction in CMV infection compared to placebo. The trial also indicated that letermovir was well-tolerated, with a safety profile similar to that of the placebo.
**Impact:** The positive results from this phase II trial supported further investigation of letermovir in phase III studies, ultimately leading to its approval for CMV prophylaxis.